The Veterinary Record

FOUNDED BY WILLIAM HUNTING, F.R.C.V.S., 1888.

No. 11. MARCH 17, 1934. VOL. XIV.

Translation

THE ETIOLOGY OF OUTBREAKS OF COUGHING IN A RACING CENTRE (*HOPPEGARTEN*) IN GERMANY: PRELIMINARY COMMUNICATION*

By

PROFESSOR DR. O. WALDMANN, DR. K. KÖBE, AND DR. J. PAPE, VETERINARY SURGEON TO THE UNION-CLUB

When the subject of swine influenza was brought up, in the course of discussion at a meeting held at the Government Research Station on the Island of Riems, on March 17th, 1933, Professor Müssemeier, Director at the Ministry, expressed the view that the condition known as racing stable cough might perhaps be a morbid process of similar nature. In swine influenza, the combination of two causal agents is necessary to set up the characteristic symptoms and pulmonary lesions (cough and bronchopneumonia): these agents are, respectively, a filter-passing virus and a bacterium, usually the influenza bacillus. Professor Müssemeier thought that work ought to be commenced by us upon the etiology of the equine condition, in collaboration with Dr. Pape, Veterinary Surgeon to the Union-Club,† as soon as the next outbreak was declared. The morbid anatomy and histology of the lesions were planned to be elucidated by Schürmann at the Pathological Institute of the Veterinary High School, Berlin.

At a consultation which took place among the authors, on April 7th, 1933, at Riems, it was decided to carry out etiological investigations in the first place at the racing centre itself; afterwards, as soon as possible, these researches were to be further prosecuted at Riems. For this purpose, the clinical laboratory belonging to the Union-Club's stud farm at the racing centre was examined and any appurtenances needed for the researches were duly installed. Besides, several stables situated at a distance of nine to twelve miles away from this racing stable were rented; these stables were isolated so far away as to exclude the possibility of other horses having come into any contact with them. At the same time, a special laboratory was erected at Riems outside the area occupied by the rest of the institute, and a number of healthy yearling to two-year-old horses were purchased or bespoken in the neighbourhood for purposes of experiment.

I.—The Clinical Characters, Extension, and Mode of Spread of the Racing Stable Cough.

There prevails at times among racehorses during the racing season, in this racing centre as in the training centres of England and France, a disease which in its progress is manifested by cough as its particular symptom (*une enzootie ou même véritable épizootie de grippe ou de pneumonie infectieuse dans un centre d'entrainement*, Gobert and Cagny, 1925). Although it is hardly ever likely to cause death, the disease is of great economic importance, because it may cause serious interference with training and racing fixtures. The clinical manifestations of the disease are fairly uniform in the conditions prevailing at the racing centre. The racing stable cough commences with a high degree of fever, 104°F. and above (40°C. and above), which often persists only for a few hours. During the febrile stage, the animals present a very dull and depressed appearance and a rough coat; they shiver a good deal and either refuse food altogether or pick up sparingly just a little green fodder. The conjunctival mucous membrane is deep red and a little swollen. Lachrymation is often seen, the discharge being watery, never purulent. The nasal mucous membrane is likewise highly congested and glistening. The lymphatic glands of the throat are somewhat swollen and painful. In a few days the changes observable on the visible mucous membranes abate and the swelling of the lymphatic glands in the throat subsides. There is never any tendency to suppuration. With the onset of the acute symptoms described above, or one to two days after they have made their first appearance, the horses begin to cough. The frequency of the cough varies considerably in individual animals and in

*From the Government Research Station on the Island of Riems, Germany (Director, Professor O. Waldmann). Translated from the original German article in *Berliner tierärztliche Wochenschrift*, 1934, Vol. 50, No. 1, pp. 1-3. We understand that the German word *Hoppegarten* is applied to a breeding and training centre, where races are also held (on the lines of a German Newmarket), situated about ten miles outside Berlin.

†This seems to correspond in Germany in some measure with the Jockey Club.

the course of the disease. It becomes very pronounced when the animals are led out into the open and increase their rate of movement. The cough sounds hollow and often causes the animals such evident pain that they seek to suppress it. There is usually no discharge from the nose. Upon the Schneiderian membrane or within the nostrils there are often seen yellow or grey floccules, about the size of lentils.

The disease always spreads quickly in the stable. As a rule, when the first case has been seen all susceptible animals become attacked three to four days afterwards. There is usually only a short delay before the disease spreads across into other racing stables so that within a few weeks all the establishments in the racing centre are afflicted with cough.

The disease very seldom remains confined to the racing centre. Most often outbreaks of cough are found to prevail, with similar symptoms, in the other training centres of Germany at the same time as in this racing stable. The disease is not restricted to thoroughbreds. Horses of other breeds become affected in the same way. In the year 1933, the disease was found to have acquired a widespread distribution among the horses belonging to the *Reichswehr* (the military organisation), police, and agricultural population.

II.—The Experimental Transmission of the Racing Stable Cough by Contact.

Coughing first broke out in 1933, as expected, towards the end of September, in the Weinberg racing stable. On September 22nd, 1933, a cough was heard first to come from the mare " Fatra," which had been racing two days previously in Grunewald. On September 24th and 25th, all the horses (25 head) in the stable were attacked. On September 26th and 28th, respectively, two two-year-old thoroughbreds from the racing stables of this centre were placed in loose boxes between the most severely affected animals with the intention of determining the contagiousness of the disease upon them and also of employing them, after they had become attacked, for further transmission experiments. Throughout the time they were kept in these boxes, for eleven and 13 days days respectively, neither of the animals showed any symptoms, despite the fact that they were kept in close contact with sick horses. It was not until two and four days, respectively, later, when they had been removed from the Weinberg racing stable and placed in the isolation stables of the Union-Club's stud farm that the animals showed the typical disease. In the light of the clinical description given above of the disease the incubation period in both of these experimental horses was distinctly long. We cannot adduce any reasons to account with certainty for this prolongation. As numerous other racing stables in this centre had become affected with cough on October 6th, 1933, a second contact experiment was carried out in another stable. On October 6th, a thoroughbred yearling was placed in the Eckartsberg racing stable. The animal had been brought direct from the stud farm and had had no contact with the racing stable until the time of the experiment. On October 9th, its rectal temperature rose to 104·2° F., and simultaneously coughing, loud and frequent, set in. On October 10th, the animal was killed. On *post-mortem* examination we found numerous small bronchi filled with sticky, yellowish, frothy masses. Smear preparations examined microscopically revealed numerous leucocytes and fibrin threads, but no bacteria. Cultural examination for the presence of bacteria using numerous heated blood agar, fresh blood agar, and Drigalski plates, as well as glucose broth, gave negative results.

From the above experiment information was thus forthcoming that the racing stable cough had to be investigated in the manner of an infectious disease which was proved to be contagious. The negative bacterial findings in the lung supplied indications for the further conduct of this work.

III.—Identification of a Virus as Causal Agent.

In the above yearling thoroughbred infected by contact we observed that the only lesions which were discoverable were to be found in the lungs. We were led to believe accordingly that if it was susceptible of being transmitted artificially the causal agent of the disease ought to be demonstrable in the lung tissue. Hence, we procured from the lungs of the diseased yearling a so-called cotton-wool filtrate. The lungs were minced in a sterile mincing machine, normal saline solution was added to the mush in equal parts, and the mixture stirred up very thoroughly by shaking. The mush was then filtered in a funnel through sterile, fat-free, cotton-wool with light suction from a water pump. With this wool-filtrate we infected a one-and-a-half year old light horse colt obtained from Pomerania, 40 c.c. of the filtrate being inserted into each nostril. On the sixth day after infection there set in a frequent and apparently very painful cough. Two days later the colt was slaughtered. On *post-mortem* examination the following changes were seen: on the mucous membrane of the trachea there lay numerous floccules, about the size of lentils, composed of a sticky yellowish-green exudate, with which many of the larger and smaller bronchi were also filled, in all sections cut through the lungs. The bronchial lymphatic glands showed marked swelling of their substance. Microscopic and cultural examination of the exudate and lung tissue

gave negative results also in the case of this horse.

On account of the negative bacteriological findings in the two experimental horses examined, which had been infected by contact and intranasally, we believed that, in the light of our experience in working with swine influenza, we had to deal with a virus in the case of the racing stable cough. Our next step was, therefore, to find out if horses would become affected after they had been infected by the same technique with germ-free filtrates of the diseased lung tissue. The wool-filtrate was passed through a filter capable of holding back bacteria, and the germ-free filtrate so obtained tested on different culture media to demonstrate its freedom from bacteria. For this decisive experiment we selected stabling premises that were kept under very special strict isolation and hence we infected two six-month-old light-horse foals in the isolation stables at Riems, where, until then, horses had never stood. Both animals fell ill on the fourth day after infection, with the typical racing stable cough. Thus evidence was obtained that the cause of the racing stable cough is a filtrable, invisible virus. We have succeeded to date [January 5th, 1934] in propagating the virus for four further passages, for which new unused stables have always been employed.

Of the numerous problems arising out of this finding, the important problem, from a practical point of view, that interested us next was how long the virus could be preserved outside the animal body. We selected for preservation storage at a temperature of -2° C. (28° F.). Fragments of lung about the size of a walnut were taken from affected horses and placed in glass tubes about 2-in. in diameter. The tubes were closed with rubber bungs and smeared with paraffin. They were then frozen in a water-bath at 28° F. The results obtained until the time of writing show that the virus can be preserved for 23 days at this temperature. There were no signs of loss of activity. We have not yet carried out tests on material stored for a longer time.

IV.—The Morbid Anatomy and Histology of the Virus Disease.

If a naturally or artificially infected animal is killed two—or, at longest, three—days after the onset of coughing, the only lesions discoverable will be found on the mucous membrane of the small bronchi in the apical and main lobes of both lungs and will be seen to consist of a sticky, yellowish or yellowish-green, slightly frothy, sometimes also stringy, mucous exudate. This exudate may be present in such small quantities during the initial stages of the disease that only a few bronchi are filled with it, and such bronchi are most likely to be found in the apical and median lobes and near the diaphragmatic surface of the main lobe. The bronchial lymphatic glands are usually very markedly swollen and moist on section. The mucous membranes of the nose, mouth, throat, and trachea invariably display no macroscopic changes. One often finds small aggregations of exudate upon the mucous membrane of the trachea which are evidently derived from the bronchi. The pleura is always intact. Nothing special is seen in any of the other organs. We have sometimes seen slight swellings of the solitary follicles in the colon, but we cannot say with certainty whether they are associated in any way with the disease or not.

Histological examination of the lungs, which has been carried out by Dr. Schmidt, lends confirmation to Schürmann's investigations from which it is revealed that the pulmonary lesion is a catarrhal bronchitis and peribronchitis, tending to the production of hæmorrhages and massive infiltration with eosinophile leucocytes.

V.—Secondary Infection in the Racing Stable Cough.

In order to study the question as to what becomes of the bronchitis with the further progress of the disease, we have slaughtered to date six horses, from the fourth to the twentieth day after infection. Three of these horses became affected through contact, and three from intranasal injection, and out of these three, one was infected with germ-free filtered material. In the horses killed 12, 13 and 20 days after infection, the apical and median lobes and more or less considerable portions (from apex to base) of the main lobe of both lungs were coloured dark brownish-red, much swollen, and traversed with wide strands of connective tissue infiltrated with a yellowish gelatinous substance. The bronchial lymphatic glands always showed very marked swelling and were very moist. In these animals likewise no lesions were discoverable in any other organs. Strongly hæmolytic streptococci in rich pure culture were isolated from the diseased lung tissue of all these animals, and we have observed no differences hitherto among the streptococci cultivated. We found in one case a few streptococci in the liver, and, in a second case, in the left kidney. The findings in one horse were of very special interest: this horse had been kept in contact for four days with animals that had been showing symptoms for a long time. In the vicinity of the bronchus running into the median lobe there was found a reddish-brown area about the size of a thumb. From this area hæmolytic streptococci were also grown in pure culture, while everywhere else the lung tissue, which showed a marked bronchitis and revealed histologically a peribronchitis, was sterile.

According to our researches there follows upon

the virus infection in the racing stable cough a secondary infection with hæmolytic streptococci, which causes the development of a more or less widespread broncho-pneumonia, notwithstanding any circumstance such as work or movement which may accelerate the progress of the disease.

VI.—Transmission of the Virus to other Animals.

After intranasal injection of germ-free filtered lung material from affected horses, we were unable to produce any symptoms or rise in temperature in rabbits, dogs and ferrets.

On the other hand, infection in this way set up symptoms and lesions in pigs about six weeks old. One or two days after infection, the pigs showed conjunctivitis, dullness, and loss of appetite. When the pigs were killed from four to six days after infection more or less numerous, irregularly distributed, greyish-red or reddish-brown, slightly swollen lobules were seen in the apical, median, and main lobes. No exudate was seen on the mucous membrane of the bronchi. The bronchial lymphatic glands were always markedly swollen. The histological structure of the lesion was similar to that seen in the virus infection of the horse. We succeeded in transmitting the infection back to the horse once in the course of eight passages in the pig. Before we can report racing stable cough to be an affection definitely transmissible to pigs it will be necessary for us to repeat the successful transmission back to horses a number of times.

By accident we observed transmission in a group of 16 two-year-old cattle with which were placed four horses that were suffering from cough and had been taken out of experiment; after an incubation period of about seven days, there were heard in the cattle frequent, very dull, deep coughs. The animals showed a rectal temperature of up to 106° F., lasting for several days, together with severe disturbance in their general condition. Of these cattle, 13 showed on slaughter a more or less widespread pneumonia of the anterior (cranial) portions of the lungs, which presented an appearance of the same kind as has been described above in the horse. Thereupon, three healthy cattle, which had first been strictly isolated for six days and shown no cough while under observation, were injected intranasally with the virus of the racing stable cough. All three fell ill on the third day after infection, with a deep, loud cough. Further transmission experiments upon cattle and transmissions back from cattle to horses are in progress, but have not yet been completed. An entirely different finding in regard to bacterial invasion has also been made upon affected cattle, which we are not, however, in a position to report before such findings have been made repeatedly several times.

CONCLUSIONS

1.—The racing stable cough of the horse is an infectious and contagious disease of the respiratory tract.

2.—It is caused by an ultravisible, filterable virus.

3.—The virus brings about a catarrhal bronchitis and peribronchitis in all parts of the lungs, with uniform changes in the tissues; these changes are only demonstrable histologically and are free from visible bacterial contamination.

4.—During the further progress of the disease, a widespread broncho-pneumonia may develop in the anterior portions of the lung; this lesion is associated with infection by hæmolytic streptococci and is caused in all probability by these organisms.

5.—The hæmolytic streptococci, which are associated with the secondary infection, exhibit culturally the same properties.

6.—The racing stable cough is transmissible to pigs and cattle.

The significance of the virus discovered in the racing stable cough from the standpoint of the pathology and epizootiology of horses, cattle, and pigs, and the secondary infections associated with the disease in the different animals, will be fully reported upon later.

J. T. E.

CATTLE IN QUARANTINE

It was announced at a meeting on March 7th, of the Council of the Royal Agricultural Society of England, over which Lord Stradbroke presided, that the Society had agreed to assist the Ministry of Agriculture in the administration of the London Quarantine Station during the period of transfer from the Society to the Ministry, and was receiving applications from exporters of live stock and arranging shipments as far forward as May.

At its last meeting the Council requested the Ministry of Agriculture to consider the desirability, in view of the prevalence of sheep scab, of prohibiting the movement of sheep from any county in which the disease existed unless such sheep had been double-dipped within 56 days of their removal. The Ministry had now expressed the view that the position did not justify such a drastic course, but, as the number of cases of scab is 127 so far this year, compared with 67 in the corresponding period of 1933, the Council decided to reiterate their request.

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"HE SHOULD TELL IT TO VETERINARIANS"

Under the above heading *The North American Veterinarian* quotes General Dawes' admonition to the Chicago Medical Society: "If you work in a profession, in Heaven's name work for it. If you live by a profession, live for it. Help advance your co-worker. Respect the great power that protects you, that surrounds you with the advantages of organisation, and that makes it possible for you to achieve results. Speak well for it. Stand for it. Stand for its professional supremacy."

General Article

LUNGWORM DISEASE IN CATTLE

A. J. KENNEDY, B.Sc. (EDIN.), M.R.C.V.S.
THORNHILL, DUMFRIESSHIRE

By "hoose" or lungworm I mean an infection of the lungs with worms; and I also include the after-effects of worm infestation. The cause is a thread-like worm in the larger and smaller air passages of the lungs. Cattle contract the disease on the grass and particularly on rich, wild, white clover pastures. I cannot say whether or not housed cattle can become infected from the fodder.

In describing a disease I think it most useful to give first a picture of the anatomical changes, for from these the symptoms naturally follow.

Post-mortem examinations of animals in the first stages of the disease have not been available to me, but in badly affected animals which succumb, I have noticed the following changes: Large masses of thread-like worms are present in many parts of the air passages, and they are more particularly numerous in the smaller passages—passages ranging in thickness from that of a pencil to that of a knitting needle. I have found worms in *large numbers* in the lungs from July till November 1st, and I have also noticed a few lungworms in a cow in February.

The question arises: At what time of year on the average do the parasites leave the lungs? Many *post-mortem* examinations of cases of "hoose" show few parasites present.

Changes in the lung tissue may consist in much increased secretion in the air passages, and well-defined red or grey hepatisation of conical areas of lung, due to a medium-sized bronchiole being blocked by parasites, its further branches being cut off from air, filled with morbid secretions, and rendered useless. An infected lung, as far as my observation goes, is characterised by a large number of comparatively small-sized areas of disease interspersed with areas of emphysematous and healthy lung. Hepatisation is not usually lobar in type as, for instance, in infectious pneumonia of sheep, where perhaps two or three lobes are completely hepatised.

Symptoms are in accordance with the lung changes. I believe that a very large proportion of cattle are slightly affected. Farmers notice a great many of their animals coughing about the time of the first chilly nights. These coughs may be due to parasites, not to the weather. Young calves are greatly weakened by the disease. The older and stronger the animals, however, the more evident are symptoms of pain and irritation of the lungs. A serious state is shown by noisy, frequent, grunting respirations. Such symptoms, in conditions like lobar pneumonia or septicæmia, would denote approaching death, but in "hoose" I venture to suggest that there is fairly frequent recovery, in spite of the severest manifestations of pain and distress.

We are all familiar with long-drawn-out cases of chronic cough, during the last three months of the year. I have noticed nearly the whole herd affected in this way, and lungworm infestation or its after-effects are the most probable explanations.

Treatment.—I believe that in an outbreak of lungworm disease in all kinds of stock we should consider that every animal in the herd is in a critical condition and that it is not impossible for the most healthy-looking individual to become a serious clinical case in a few days. The best of nourishment is indicated and the animals should be placed in a suitable house or pasture away from the infected grass.

We have also to decide in any given case whether there *are* any parasites in the lungs. If so, it will be a great step forward to have them killed. The only method I have used to any extent for this purpose has been that of intratracheal injection. And here I think it will be of the greatest interest to have a candid discussion on treatment.

For my part, I give one injection of 15 to 20 c.c. of a turpentine, olive oil, creosote, chloroform mixture. This mixture was subjected to a small control test in Australia. The report on its use stated that it killed most of the worms and did not damage the lung. In various experimental results published I notice that an olive oil base seems to be associated with non-irritation of the lungs. I, at one time, used much the same injection as mentioned above, *plus* potassium carbonate, but lost two strong heifers a day or two after injection on one occasion, the *post-mortem* showing rather diffuse acute pneumonia and very few parasites present. I have injected fairly large numbers of cattle, calves up to adult cows, and apparently there is no serious effect with my present injection in regard to inflaming lung tissue.

Lately I injected a two-year-old bullock which was not making any progress under good nursing and feeding. He had suffered for six weeks from dyspnœa and painful cough. For a week after injection his appetite almost completely left him, and the condition gave the owner cause for alarm. The injection had probably produced an irritating effect, in this case of fairly extensive broncho-pneumonia. However, he came on again, and at present is making good progress.

I can put before you only one experiment, controlled more or less scientifically. In one outbreak the farmer had heard of "big losses after injection into the wind-pipe"—however, his cases were simply hanging fire and giving rise to anxiety. Out of eight animals about

eight to ten months old I injected the four worst, not without some fear of bad results. The injected animals gradually improved during the next ten days, and showed fewer manifestations of the disease than the controls. This improvement was quite noticeable to the farmer and to the byreman.

In closing my remarks I feel that I have missed opportunities of making occurate observations on the disease, and that there are many points on which I am ignorant: I shall be very much obliged if one and all of you will be good enough during the discussion to add as much knowledge as you can where mine is lacking.*

*The foregoing paper was presented to the Annual General Meeting of the Dumfries and Galloway Division, at Dumfries, on December 21st, 1933. Other papers were presented, but, with the exception of that published in our Clinical Section, were not made available for the Secretary of the Division, who, in consequence, has had to withhold the report of the joint discussion.—Ed., *V.R.*

TREATMENT OF FOOT-ROT IN SHEEP

D. Murnane, in the *Journal of the Council for Scientific and Industrial Research, Australia* (1933, November) confirms the findings of Carne and Beveridge, working at Sydney, that foot-rot in sheep is caused by the necrosis bacillus (*Fusiformis necrophorus*). In all cases, treatment comprises cleansing of the hoofs, cutting away all loose horn, and collective baths in either of the following solutions: copper sulphate, 5 per cent.; or formalin, 2 per cent. Individual treatment of severe cases can be carried out by means of antiseptic dressings kept in place by special foot-rot boots, which are now sold on the market. Either of the following solutions can be employed for local treatment: picric acid, 2½ per cent. solution in methylated spirit; formalin 1 part, glycerine 9 parts; apply with a brush. The following preparation is recommended in Victoria: stir two ounces of copper sulphate into a quart of hot Stockholm tar, and then add one tablespoonful of lysol; apply with a brush. The use of caustics such as pure carbolic acid, hydrochloric acid, or formalin is contra-indicated on account of the extensive destruction of healthy tissues which they bring about.

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Steinach has decided, as a result of studies carried out in the Veterinary School in Zürich, Switzerland, that the injection of hormones is a satisfactory substitute for his famous operation of gonad transplantation, and, of course, is far less expensive. Professor Walter Frei and Drs. Staheli and Gruter, three Swiss veterinarians, collaborated with Professor Eugene Steinach in this work. Although this is perhaps the first controlled experiment to demonstrate that the hypodermic injection of hormones is as effective as gonad transplantation, veterinarians in many parts of the world have been using hormone injections for this purpose for some time.—*Vet. Med.*

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The Richmond Royal Horse Show will be held on June 14th, 15th and 16th. There has been added to the schedule a new class for middleweight hunters, so that there will now be five hunter classes.

The Veterinary Record

March 17th, 1934.

THE ADVISORY COMMITTEE ON PARASITIC DISEASES

The formation of this Committee is one of the natural outcomes of the increase of veterinary knowledge, although its actual birth must be attributed to the suggestions contained in a paper given by Mr. A. W. N. Pillers at the 1933 Congress at Llandudno. With the growing need for specialisation comes an increasing danger from the isolation of the specialist, and the requirement of some provision for transferring his knowledge to the place where it is most needed. This important part of the application of knowledge is often overlooked, although the requirement is obvious enough, and the formation of this Committee is a step in the right direction. On the other hand, such a Committee may be used for bringing the needs of the practitioner to the attention of those who are regarded as specialists.

Now that the subject of parasitology has received a greater measure of recognition in the curriculum for our diploma, the future veterinary graduate should, if he profits by the teaching which will doubtless be forthcoming, commence his post-graduate career with a wider and more intimate knowledge of the subject than has been the case in the past; but the time-tables of life are pressing, and in his later career he cannot hope, unaided, to keep up with the advances in every department of veterinary knowledge. Ready access to the services of experts through the Committee in this important but highly specialised subject will therefore represent a great saving of time and an increase of efficiency.

The Committee may be regarded in the light of an information bureau of a special and intimate kind, and its principal line of activity in fostering a knowledge of parasitic diseases will doubtless be the collection, correlation, and distribution of information. The summarising of the literature on the subject is already provided for by the Imperial Bureaux of Animal Health and Agricultural Parasitology, and although the Committee may do something of this kind, it is felt that its principal activities will lie in another direction.

In an address recently published in our journal, Professor Leiper has spoken of the zoological aspect of helminthology as "normal parasitology," in contradistinction to the study of the causes and effects of excessive infestation and the injuries due to helminth migration, which may be termed "pathological parasitology." He pointed out that "while those who

wish to pursue the study of 'normal parasitism' must accept the intellectual discipline of the zoologist, those who desire to study 'pathological parasitism' must be equally prepared to submit to the intellectual discipline and training required of the clinician. For in the estimation of the effects of parasitism an intimate knowledge of the other diseases to which the host may be susceptible is requisite."

The available knowledge on the association of parasitic worms with disease is relatively scanty, and it is felt that in this field the Committee has a constructive function to perform in collecting and correlating data from practitioners. This would lead to clearer methods of diagnosis, and an indication of the significance of low-grade infestations and of the relative economic importance of some of the commoner parasites.

The terms of reference of the Committee are very wide; it will have to feel its way slowly: the need for its formation is, however, clear, and its usefulness will doubtless increase as time goes on. The names of the members of the Committee, under the chairmanship of one who has done so much, are sufficient guarantee that its work will be of the highest order.

I.F.S. VETERINARY COUNCIL'S SUCCESSFUL PROSECUTION

At Thomastown the Saorstat Veterinary Council prosecuted John Hehir, Bodalmore, for practising veterinary surgery on a cow, the property of M. Kearns, Kells, when he was not a registered veterinary surgeon. Mr. J. W. Buggy, solicitor for the Veterinary Council, said they were driven to bring the proceedings as it was the first case in which they had available evidence. It was a well-known fact that men went around as unqualified veterinary surgeons attending to animals. Mr. McCabe, D.J., imposed a fine of £1 with £1 costs.

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THE HACKNEY HORSE SOCIETY

The fiftieth Annual Show of the Hackney Horse Society will, this year, be held at Salisbury, on June 7th, 8th and 9th, in conjunction with the Royal Counties' Agricultural Society. The usual comprehensive classification is again provided, and horses and ponies of all heights are liberally catered for. Classes for pairs, tandems, amateurs, novices and ladies driving are also included.

An interesting feature this year is the inclusion of a children's driving class, open to boys or girls not exceeding 17 years of age, with a special prize for the best driver.

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The People's League of Health, in a memorandum presented at the request of the Departmental Committee on the Composition and Description of Food, advocate the establishment of a permanent standing committee and the alteration of the law in order to enforce a measure of control over claims made regarding the nutritive value of foods.

Clinical Reports

FISTULOUS WITHERS AND POLL-EVIL: SUCCESSFUL TREATMENT WITH BACTERIN*

ALEXANDER NIVEN, M.R.C.V.S.
Inverurie, Aberdeen

The first case occurred in a very valuable five-year-old gelding doing regular work on a farm. When the horse was first seen, there was an extensive swelling with fibrous walls, the upper part of which was much wider than the lower, extending from the top of the withers on one side, half way down the scapula. The condition had been apparent for a considerable time and the swelling steadily increasing. Rightly or wrongly, I diagnosed the condition as "fistulous withers," although not of an ordinary type. There was very little pain, heat, etc., in the swelling, and it was decided to dissect out the affected tissues. When the operation was completed, a distinct sinus could be traced into the deeper structures of the withers. The wound healed up splendidly, but about four months later a swelling about the size of a large duck egg appeared again. It was left alone for a considerable time, but as it continued to increase in size, it was again dissected out. Three months later, an oval-shaped swelling, which quickly increased in size, again appeared. It was now decided to try some anti-bacterial treatment, and an injection of streptococcus-staphylococcus bacterin was given. Four days later a second injection was given, and there was seen to be a distinct decrease in the size of the swelling. After the second injection the swelling entirely disappeared. The horse was a good while on the farm and was finally sold for a big sum to go to Glasgow.

The second case was a typical one of poll-evil. This occurred in a mid-aged farm gelding, a thick, wide, useful sort, and good worker. The animal had, on each side of the mesial line of the poll, an enlargement, which was hot and painful to the touch, stiffness of neck, etc. This case was allowed to go on for a long time before anything was done, owing to the season of the year, work on farm, and other reasons. Both swellings were allowed to burst of their own accord, and the wounds were treated as open wounds. Benefiting, as it turned out, from my experience in the first-described case, four different injections of the streptococcus-staphylococcus bacterin were given. Injections were given at four days' interval. No further treatment was given, and the horse made a complete recovery.

* Cases presented at a meeting of the North of Scotland Division, N.V.M.A., at Aberdeen, January 27th, 1934.

[Mr. Niven went on to say that by bringing these two cases forward, he did not mean to infer that he had found a specific cure for such serious diseases as poll-evil and fistulous withers, especially where the deep-lying structures are diseased, but he considered that his method of treatment might be useful even when an operation has to be performed.]

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TWO CASES OF SARCOMA IN THE COW*

R. SIMPSON, F.R.C.V.S., D.V.S.M.
CARLISLE

The occurrence of sarcoma in the bovine species is sufficiently uncommon to suggest that an account of the following cases may be of interest.

CASE NO. 1.—The animal involved was a Shorthorn cow about six years old. She developed a small swelling under the skin about the size of a duck's egg, the swelling being situated in the region of the jugular vein on the left side of the neck. This was first noticed about April of this year. The tumour gradually increased in size and extended down the neck towards the front of the shoulder. The case was seen by Mr. Hewetson, M.R.C.V.S., of Brampton, who explored the tumour without finding any evidence of pus. A blister was applied and a course of potassium iodide prescribed. The swelling continued to increase in size, and in August Mr. Hewetson invited me to examine the cow. At this stage, the cow was in fair condition. Auscultation of the chest showed some dulness of the lungs, but there was no chronic cough present. The tumour described above had now reached enormous dimensions, being rather larger than a football. A similar tumour was also noticed to be commencing on the opposite side in front of the shoulder.

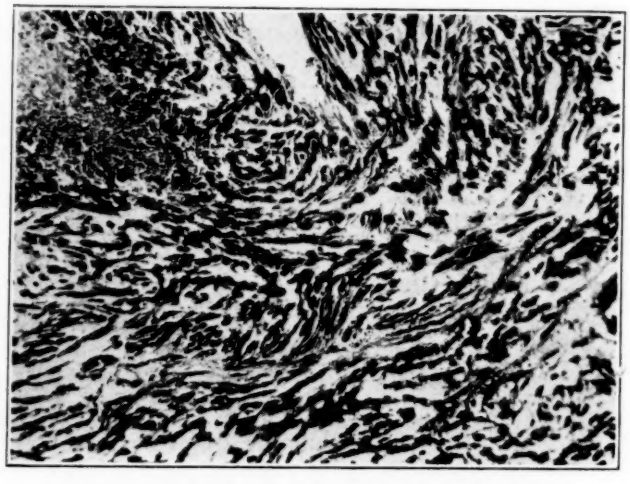
The possibility of the condition being due to tuberculosis was considered, and as no material from the inside of the tumour was available for examination, the tuberculin test was applied, with negative results.

As the case appeared to be hopeless from an operative point of view and the tumour on the left-hand side appeared to be causing the cow considerable inconvenience, the owner was advised to have the cow slaughtered, and a *post-mortem* examination was carried out.

The tumours were dissected out and found to weigh 38-lbs. together. On sectioning, these were found to contain mainly dense fibrous tissue, with no evidence of pus formation or caseation. Small areas of necrosis were found in the inner parts of the tumour. The tumours appeared to have originated from the cervical glands of both sides. Metastatic lesions of a similar nature were found in the substance of both lungs, in the bronchial, mediastinal, prescapular and mesenteric lymphatic glands. The liver was also affected.

Pieces of the larger tumour and specimens from the lungs and lymphatic glands were submitted to Dr. Faulds, Pathologist at the Cumberland Infirmary, who reported that the lesions were spindle-celled sarcomata. Sections were also submitted to Dr. Leslie Sheather and to Professor Gaiger, who were kind enough to examine them for me. The former expressed agreement with Dr. Faulds as to the nature of the tumours, but Professor Gaiger stated that he was inclined to consider the material to be tuberculous in origin, although he could find no trace of tubercle bacilli.

Through the courtesy of Dr. Faulds, microphotographs of the sections prepared are shown. [We reproduce one of these.—ED., *V.R.*]



SECTION OF LYMPHATIC GLAND.

CASE NO. 2.—The animal involved was a Shorthorn heifer. The case was first seen by Miss Burnett, M.R.C.V.S., Calderbridge, and the clinical history is much the same as in the previous case, except that the tumour formation was confined to one side and appeared to involve the prescapular gland. The size of the tumour was also much less than in the previous case.

Miss Burnett made a *post-mortem* examination in this case, and kindly supplied me with the following information as to the lesions found.

The parotid and submaxillary glands on the same side showed the same condition as was found on the prescapular gland. There was patchy congestion of the lungs and some fibrosis, but apparently no actual tumour formation. No other lesions were found.

Sections were cut from the lesion in the prescapular gland by Dr. Faulds, of the Cumberland Infirmary, and he described the tumour as a lymphosarcoma.

*Cases presented to the Annual General Meeting of the Dumfries and Galloway Division, N.V.M.A., at Dumfries, December 21st, 1933.

Annotation

The Warble Fly Pest: Recent Progress in Germany; Control by Legislation; Effective Larvicides

With the acquisition of more knowledge upon the life history of the warble fly, it has often seemed not unreasonable to hold the view that the eradication of the pest is possible. Writing some years ago, the late Professor Penberthy, after referring to the evidence then accruing that the parasite reached its destination under the skin after much wandering through the tissues from the digestive tract, said: "The warble fly probably develops in no other way than that described, and winter residence in the skin or tissues of cattle is essential, so that if all the maggots in the cattle of a district were destroyed, infestation in the coming summer would to a large extent be averted. Indeed, this special condition in the life-history of the warble fly suggests that concerted action might annihilate the species."

Attempts at concerted action have been made in several countries. We learn from Professor Moussu's standard text-book (1911 edition) that "curative treatment consisting in the extirpation of the subcutaneous larvæ has been practised in Denmark, Holland and Germany since 1902-03. And, to this end, breed societies cause all herds to be inspected as soon as spring arrives, and then at intervals of two to three weeks afterwards. Specially trained men proceed to de-warble the animals, using an implement in the form of an extractor with a very sharp point like a steel pen . . ." But, he concludes, laconically, that "in France, nothing of this sort has yet been attempted, or even proposed."

Much valuable work has been carried out, however—in Ireland, America and elsewhere—to determine the precise development of the warble pest and the steps most appropriate for its control. Perhaps, the most thorough investigations in progress are those which have been recently reported periodically from Germany, and which have now resulted in the accumulation of sufficient experience to warrant, in the considered opinion of the Reich government, the enforcement of concerted action by special legislation. Since 1926, the departments concerned in the Reich and State governments, acting in collaboration with the various bodies interested economically in the problem (agriculturists, cattle dealers, butchers, meat trade, hide merchants, leather industry, etc.) under the direction of the Reich Ministry of Food, have carried out exhaustive enquiries into the control of the warble fly pest. With the adequate financial support thus forthcoming, scientific experiments upon fundamental matters and measures of practical control have been undertaken. The reports of the conferences have been summarised by Dr. Schwerdt, Berlin.* Following upon the conclusion unanimously reached by the last conference, on October 23rd, 1933, that, most emphatically, lasting benefits were to be attained only from appropriate legislation, the Reich government promptly enacted a summary Law to deal energetically with the situation. The provisions of this Law, dated December 7th, 1933, are comprised in the following Articles:—

"1. Within the meaning of the Law warble flies are understood to be the large warble fly (*Hypoderma bovis*) and the small warble fly (*Hypoderma lineatum*).

"2. Every cattle-owner must take steps between the months of February and May (latest May 31st) to destroy all larvæ of the above flies developing on his premises.

"Notwithstanding any obligation which may fall upon him as enacted above, an owner must also take steps to destroy larvæ upon all cattle belonging to him that are to be turned out to grass, whether upon land appertaining to himself or other person, immediately before they are due to be turned out.

"3. An occupier of land must not admit upon his land any cattle, whether belonging to himself or other person, unless they are free from warble fly larvæ.

"If larvæ develop nevertheless upon the cattle during the pasturing season, the occupier of the land must take steps to destroy them, provided that it is possible to house the cattle for this purpose on the land. Otherwise, he must take steps to destroy them as soon as this is possible.

"4. Cattle kept for breeding or production must not be taken to open markets, fairs, or shows until any warble fly larvæ developing on them have been destroyed.

"5. The Reich Minister of Food and Agriculture is empowered to issue the necessary legal ordinances and general administrative instructions for the execution of this Law. He may also issue instructions supplementary to the text.

"In so far as he may not have utilised the powers conferred upon him for the issue of executive instructions, the chief departmental official concerned of the local authority is entitled to draft the necessary instructions.

"6. Any person who wilfully or negligently contravenes the provisions laid down in Articles 2, 3 (para. 1 and 2, first sen-

* *Berlin. tierärztl. Wschr.*, 1930, *46*, 179; 1931, *47*, 409 and 802; 1932, *48*, 200; 1933, *49*, 209 and 211; 1934, *50*, 42 and 123.

tence), or 4, renders himself liable to a monetary fine . . ."

In the statement of objects accompanying the Law, the view is expressed that through its application the warble fly pest ought to be exterminated gradually within a relatively short period of time. The experience already acquired upon the efficacy of methods of control that have been investigated systematically clearly shows that timely and thorough treatment of all cattle infested with the warble fly larvæ, followed by proper supervision and treatment later when the cattle have been turned out to grass will bring about a marked diminution in the losses well known to be caused by these parasites. These losses comprise the decrease in weight, falling-off in condition through inappetence, lowered milk yield, nauseating appearance of carcass in slaughtered animals ("licked beef"), diminished returns through perforated hides, and the losses amounting to millions of pounds which are suffered by the hide and leather industries.

The Larvicides Recommended for Practical Application

In the above Law, all reference to the choice of agents for the destruction of the larvæ was expressly omitted, for the reasons that, with the large range of medicaments available, it was not desired to create any monopoly in the sale of particular remedies that such a recommendation might entail, and also because it was realised that the eventual choice would depend upon the prevailing local conditions and the state of the infested animal's skin. The experiments carried out during 1933 definitely indicated, however, that the choice of larvicides could be restricted to preparations derived from two sources, namely, delicia and derris root. As is now well known to horticulturists in Britain, derris root preparations have recently acquired a very wide application as insecticides, particularly in decoctions in soapy solution applied in the form of sprays or washes for the destruction of green fly (*Aphis*) pests, in gardens. These preparations have been placed on the market by a number of commercial firms.

The results forthcoming from large-scale field experiments and local research centres proved that treatment with good derris preparations was the most rapidly effective, most harmless, easiest and cheapest of all the methods tried. The active principle, *rotenon,* found in derris seems to exert an extraordinarily powerful toxic action upon the warble fly larvæ, which is far more destructive than that contained in any other preparation tried. Simple application to the skin would seem to cause absorption of enough of the active principle through the breathing pores of the parasite which penetrate the skin to bring about rapid destruction of the parasite. It is not recommended that attempts should be made to manufacture home-made decoctions, for the reason that the preparations sold by certain commercial enterprises are likely to be more uniform in their content of the active principle. Oily preparations have the advantage that they remain longer in the coat, but suffer the disadvantages that they are more expensive to procure and apply. Decoctions in soap solution, however, have the merit that they are cheap and simple to use, for the reasons that the hair need not be clipped, and they need not be rubbed in energetically; thus, about a hundred head of cattle could be de-warbled and treated in a day by one man. A good derris preparation ought to contain 8 per cent. *rotenon.* Some German chemical firms of repute now put up concentrated preparations for sale, and these have been shown to yield a 100 per cent. efficacy in the course of trials upon cattle. Although upon the labels of tins containing derris preparations for garden use in Britain it is stated that the material is non-poisonous, the German experiments showed that they are not indeed completely innocuous. It was found that 0·01 gram of *rotenon* represented a subtoxic dose for a beast. However, animals never ingested the materials willingly, and after licking some of the wash from their backs they were seen to salivate a little. On the whole, therefore, the medicament could be regarded as safe.

In the treatment of the so-called "late crops" of warbles which are seen to develop later in the season, during May to June or July, while supervision of the cattle upon pastures is being followed up, treatment with derris preparations seems to be ineffectual. A crotchet needle employed in careful hands is recommended as highly effective during this important stage of treatment. Where cover is not provided on pastures, so that any persisting larvæ are likely to fall out on the grass and continue development, the use of sharp rods for spiking the larvæ was proved again to be satisfactory.

Oily preparations of delicia were also found to be very good when properly applied, but they had the disadvantage that the hair over the warbles had to be clipped and medicaments thoroughly rubbed into each swelling.

Experiments upon protective inoculation did not yield encouraging results. Laboratory diagnosis was found to be difficult: the precipitin test gave an indistinct reaction; the complement test gave more sharp-cut results, but it is not yet known whether the reactions observed were specific or not.

Hence, it is concluded by the writer of the last report (Dr. Schwerdt) that derris preparations* easily take first place in undertaking the thorough-going treatment enforced by the new Law. According to Bartels (Schleswig) the

cost of treating about 7,000 cattle (excluding the cost of labour) amounted in the case of delicia to 2¼d. a head; in the case of derris (including soap wash) to 1¾d. a head (at current rate of exchange). It is stressed as absolutely essential that derris preparations should only be applied with a definite knowledge of their *rotenon* content; otherwise the new Law might well suffer a disastrous *contretemps* at the very outset. On the other hand, with the proper observance of the conditions now legally enforced upon him in respect to de-warbling, the German peasant ought to see his outlay returned to him with a very large rate of interest.

J. T. E.

[*Wood and Lowall (*United States Dispensatory*, 1926, 21st. edition) state that an arrow poison is used by the Malays under the name of *Ipoh*, which is said to be obtained from *Derris* (*Pterocarpus*) *elliptica* Benth (Fam. *Leguminosæ*) or *tuba root*—this is much used in Java as a fish poison. It contains an active acid resin, to which the name *derrid* has been given. This is presumably the same ingredient as that to which the Germans have now applied the name *rotenon*. *Derrid* has been reported to be one of the most powerful fish poisons known, 1 part in 5,000,000 having stupefied goldfish in a few moments and killed them within half-an-hour. According to the researches of van Hasselt (1911), closely allied to *derrid* are *pachyrhizid*, from *Pachyrhizis angulatis*, and *nicoulin* from the *nekoe* or *stinkwood*. These drugs are powerful poisons to the central nervous system, especially the respiratory centre, and in larger doses cause slowing of the pulse by a direct action upon the heart muscle. Derris preparations have been tried for some time, following upon the discovery of their use by East Indian natives as fish poisons, as insecticides (Dr. H. H. Green, personal communication), and in this respect their use has been exploited for the destruction of ectoparasites. As the active ingredients of sheep dips, however, they have not supplanted the commonly used arsenical and carbolic preparations, their defects relative to these being that it is difficult to obtain samples of derris powder of uniform activity and that the substance is not stable in watery suspension, so that it has to be freshly prepared before use. It has, however, the merits of cheapness and very marked toxicity towards insects as compared with the larger animals. Hence it is reasonably safe in common use. Its use has been extended recently to other ectoparasites in Germany, and with larger employment it is expected that more convenient and stable extracts or derivatives will be put up by commercial firms.

I have not yet been able to ascertain the nature of the "delicia" oil referred to in the annotation, although there are references to its use in the recent German veterinary literature.]

J. T. E.

VETERINARY SCHOLARSHIP PLAN FOR VICTORIA

An investigation of methods likely to encourage young Victorians to take up the study of veterinary science is to be made by the Melbourne University Council, arising out of a suggestion for the creation of students' scholarships made to the Council by Professor Ewart. It is hoped that the Education Department may be persuaded to revive its special veterinary scholarships, in view of the economic losses now being caused in Victoria through the shortage of trained veterinary officers. Professor Ewart said that it would be necessary to create two or three scholarships, at a cost of £200 each a year.

Complete courses in veterinary science have not been taught at Melbourne University since 1928, when it was decided to transfer training to Sydney, as an economy move, and to continue the Veterinary School solely as a research institute. The immediate saving from that move was £1,500 a year, but Victorian students, after completing their first two years' training, were forced to go to Sydney to complete their course. This added cost to the students resulted in a falling off in applicants for the course, and in a reduction in the Melbourne training to only the first year of the science. Now practically no students take up the science in Victoria, and not only is there an acute shortage of veterinary officers in the State, but also Victoria has only one resident officer to every five resident in New South Wales. That proportion is rendered even more insufficient by the comparative stock values of the two States.

A somewhat similar suggestion was made to the recent Australian Veterinary Congress at Canberra by Dr. H. Albiston, of the Melbourne Veterinary Research Institute. In his presidential address he said that shortage of trained officers was handicapping Victoria, and suggested that, as Sydney now had the only University in Australia where the full science was taught, the other States should introduce subsidies, scholarships or cadetships to encourage their own students to train in Sydney.

Dealing with this shortage of officers, Dr. Albiston said that there were now no Melbourne graduates out of positions in Victoria, and that when a position did become vacant endeavours had to be made to secure a graduate from Sydney.

"Many Victorian country districts, especially dairying districts, are anxious for veterinary officers to settle in their districts," said Dr. Albiston. "Unfortunately there are no men available to go to those districts, and as a result the annual stock losses in the State must represent a very considerable value."

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For failing to report an outbreak of sheep scab on his farm, Henry Benn, of Kinniside, Ennerdale, was fined £20 and costs by the Whitehaven magistrates. Thirteen affected sheep were found on the premises.

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The numbers of animals slaughtered in the South American frigorificos during 1933 were: Cattle 4,088,340, compared with 3,840,960 in the previous year; sheep 6,300,792, as against 5,505,763; and pigs 1,100,087, compared with 872,961 in 1932.

Abstracts

[**Some Observations on Hæmoglobinuria.** (Trans. title.) Brunschwick, *et al. Bull. de l'Acad. Vét.* (1933.) *6*, 10, 457-468.]

These are observations recorded by a number of French veterinarians on the treatment of hæmoglobinuria in horses, with special reference to the subcutaneous injection of bovine blood.

M. Brunschwick relates details of three cases; in the first, in spite of the late application of hetero-hæmotherapy some improvement occurred but the horse became violent during the night and fell several times and the owner destroyed it. In the second and third cases, which were seen early, the injection of bovine blood was followed within a few days by complete recovery.

M. Charbonnel gives particulars of a case which he commenced to treat with dry friction of the body, the application of hot vinegar to the loins and the injection of arecoline. The symptoms became aggravated, so an injection of ox blood was given, after which recovery began to take place.

Dr. Usse describes a case which was at first treated with an intravenous injection of 250 c.c. of bicarbonised artificial serum, but 13 hours later an injection of ox blood was given, which was followed by severe symptoms of shock. On the following day the horse was still in lateral decubitus and received an injection of 30 c.c. of camphorated water. On the next day the horse got up for a short while and subsequently complete recovery occurred.

M. Dadot's case received a subcutaneous injection of 300 c.c. of ox blood that was not citrated but stirred to prevent clotting. Symptoms of shock followed immediately but did not last long, and by night the horse was remarkably improved. Unfortunately, during the night a fresh crisis occurred and the injection of ox blood was not repeated for fear of anaphylactic shock. Arecoline, chloral and the intravenous injection of magnesium sulphate gave no result. The writer regretted not having given a larger dose of ox blood.

M. Blaringhem records two cases. The first was treated with an injection of sodium cacodylate, pilocarpine and caffeine, and also 400 c.c. of ox blood. On the next day the horse became worse after 4 litres of blood had been removed, and the owner destroyed it. The second case was also relieved of 4 litres of blood and then received an injection of 450 c.c. of ox blood. Improvement soon commenced and in eight days recovery was complete.

M. Gillot is in favour of copious bleeding even in quantities from 6-12 litres; this has been his practice for 37 years. Recently, however, he was persuaded not to bleed a case of hæmoglobinuria. The treatment adopted was dry frictions and hot fomentations of the loins. The horse died and its death was attributed by M. Gillot to failure to remove blood.

M. Vicard relates the details of two cases, one of which received a normal dose of ox blood and the other a minute dose which he fears may have caused an anaphylactic reaction. Both horses appeared likely to die and a consultant was called in, who recommended bleeding. From 2-3 litres of blood were removed from one horse and 5 litres from the other, but both horses died.

M. Humbert describes three more or less mild cases which were bled and died within a short period. These, he considers, condemn the practice of bleeding. A fourth case is recorded which was at first bled lightly (2 litres), but this provoked an unfavourable reaction, so an injection of ox blood was given. A period of excitement followed the injection, but this was soon succeeded by marked improvement and recovery ensued.

M. Cocu relates details of a case which was bled (7 litres) and treated with hot vinegar frictions followed by a mustard poultice. This horse was better on the next day.

J. S.

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[**On the Reactions Caused in Horses by the Subcutaneous Injection of Bovine Blood.** (Trans. title.) Brunschwick, M. (1933.) *Bull. de l'Acad. Vét., 6*, 10, 429-430.]

This injection is stated to be slightly painful and irritating, but the œdema produced is rapidly absorbed and the inflammatory reaction disappears in a few days.

The shock which may immediately follow the injection of the blood is generally fleeting and slight: the conjunctivæ become slightly paler, the pulse more rapid and weaker, and respirations more marked. In certain cases, however, the shock is more serious and accompanied by signs of pain and colic. Another reaction, however, has been observed in four horses subjected to this treatment. From five to six days after the injection and when all trace of it had disappeared a large and painful swelling occurred covering nearly the whole of the side of the neck or the shoulder. The thickest place was in the centre, at the point of the inoculation. At the same time general symptoms were also exhibited, the temperature and pulse being affected. The first two cases of this nature alarmed the writer and he injected anti-gangrene serum and applied "red ointment," and in from 24 to 36 hours later the temperature had returned to normal and the local condition improved.

J. S.

[**The Prevention of Diseases Transmissible by Blood during Successive Intravenous Injections.** Bouet. (1933.) *Bull de l'Acad. Vét., 6,* 9, 384-385.]

The injection apparatus consists of a graduated flask fitted with a rubber stopper which is pierced by two glass tubes; to the short tube an air pump is attached, while the long one reaches to the bottom of the flask. To the upper end of the long tube is affixed a convenient length of rubber tubing, at the end of which is a metal tap having a female fitting distally. To this tap the writer attaches a piece of rubber tubing of about 10 cm. in length, having a male fitting at each end. One male fitting is adapted to the tap and the other to the needle. A number of these connections is prepared and sterilised before use.

Before each injection a fresh sterile connection is fixed to the tap which is, of course, closed. The free end of this connection is then attached to the needle, which has been previously placed in the vein, and the tap is opened for the injection. A sterile connection and needle are used for the next injection.

The changing of the needle only is not a sufficient precaution against the transmission of disease. The operator's hands should be washed and dipped in an antiseptic solution between each injection.

J. S.

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[**Allylic Triformol-glycerine in the Treatment of Bovine Verminous Bronchitis.** (Trans. title.) Froger. (1933.) *Recueil de Méd. Vét. de l'Ecole d'Alfort, 109,* 12, p. 911.]

Two treatments of 5 to 10 c.c. of allylic triformol-glycerine at an interval of five to seven days are very effective against *Dictyocaulus.*

Reflex coughing due to the intratracheal injection of liquids is diminished if the solution is warm and isotonic.

Some trial has been made of the method for sheep, but although good results have been obtained, the number treated does not warrant a conclusion.

This treatment permits the use of a fine needle, and any error of technique is not followed by local reaction as is often the case with preparations containing creosote, turpentine, iodine and cajeput oil, and amelioration of the condition is more rapid (proved by direct comparison). Besides which, in the case of failure by these other oily solutions, a single injection of allylic triformol-glycerine often leads to recovery when apparently applied rather late.

(Note.—The abstractor can find no record of this compound, but it appears from its name to be composed of some garlic radical, paraformaldehyde and glycerine.)

C. V. W.

[**A Case of Prolonged Gestation in a Cow.** Struck, M. *Tierärztl. Rundsch.* (1934.) *40,* 9.]

The first half of this article consists of a review of the cases of abnormally long gestation reported in veterinary literature.

The age, weight and measurements of the fœtuses and a short account of the health of the mother are given in each of the instances quoted. The length of gestation varied from eleven to 20 weeks beyond the normal period and the weight from 149 lbs. to 218 lbs.

The author describes a case of which he had experience. A four-year-old cow, served on April 30th, 1932, showed signs of springing on May 22nd, 1933. On the 387th day four men endeavoured, unsuccessfully, to remove the calf. On account of its size it had to be removed in pieces by the attendant veterinary surgeon. It weighed 180 lbs., was well formed, though emaciated, and the hair was longer and thicker than in the case of a normal calf born up to time. The mother showed no untoward symptoms and was working again after a very short interval.

N. S. B.

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[**On the Presence of Tetanus Antitoxin of Occult Origin in the Serum of certain Domestic Animals, and of Cattle in particular.** (Trans. title.) Valcarenglii, E., and Richou, R. (1933.) *Bull. de l'Acad. Vét., 6,* 9, 386-389.]

The writers have examined the sera of a number of animals for the presence of tetanus antitoxin by the injection into cavies of mixtures of serum, or dilutions of serum, with lethal doses of the toxin, or fractions of that dose.

In pigs of about 18 months old, and dogs from one to eleven years old, no trace of antitoxin was demonstrable, and the sheep examined under two-and-a-half years old showed no trace of immunity. Cattle, on the other hand, showed variable quantities of tetanus antitoxin in two-thirds of the animals examined. In general, the amount of antitoxin increases with age, though young calves show a marked passive immunity (of maternal origin) which, however, diminishes as the calves grow older.

The immunity is considered to result from the production of the specific antigen by the vegetation of the tetanus organism in the first, second and third stomachs of ruminants.

J. S.

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[**The Transmission of Vitamin A from Parents to Young in Mammals. II. The Carotene and Vitamin A Content of Cow's Colostrum.** Dann, W. J. (1933.) *Biochem. J., 27,* 1998-2005.]

The placenta, the colostrum and the milk are the three available channels through which young mammals receive supplies of vitamin A

up to the time of weaning. Of their relative importance and the factors controlling the efficiency of each we know almost nothing. In experiments upon rats and rabbits it had been found almost impossible to distinguish between their colostrum and milk. Hence, the preliminary experiments described by Dann in this paper were carried out with cow's milk. The 14 cows examined belonged to a herd of dairy Shorthorns kept at the Cambridge University Farm. This herd grazes collectively in summer and in the winter receives hay collectively in covered yards. During the winter roots are given to the animals individually, and all the year round concentrated foods are given to each animal in proportion to its milk yield. The roots given are marrow kale, sugar beet pulp or mangolds; the concentrates vary according to the market price of the constituents, but a typical concentrate contains crushed beans, flaked maize, crushed oats, ground nut cake, cotton seed cake, bran and steam bone flour. Thus the carotene of the cow's diet (on which it is wholly dependent for carotene and vitamin A in the colostrum and milk) is chiefly supplied by the grass or hay, to a small extent by the roots, and much less still by the concentrates. The cows are allowed a dry period of two months before calving, and after birth a calf is allowed to suck for four days before it is weaned and the parent milked.

It was shown that the vitamin A concentration in colostrum may be ten to 100 times greater than in later milk from the same cow, independently of season, and that the carotene content of colostrum may be as much as 70 times greater than in later milk unless calving occurs during late winter feeding. The colostrum of heifers was found to be generally richer in vitamin A than the colostrum of cows—on an average over twice as rich. The importance of colostrum as compared with the placenta and milk as a source of vitamin A for the young calf was thus clearly demonstrated: on the first day of life the calf receives supplies of vitamin A greater than the later milk could give in 20 to 50 days.

J. T. E.

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[The Treatment of Nutritional Diseases of Herbivora by the Administration of Vitamins. (Trans. title.) Chatelain, P. (1933.) *Bull. de l'Acad. Vét., 6,* 10, 452-454.]

Owing to the difficulties in obtaining suitable food in the Far East the horses and mules concerned were fed almost entirely on paddy. At first condition was lost, but when they became used to the diet their former condition was regained, although some showed ocular lesions indicating a vitamin deficiency. Others became emaciated. During treatment with preparations of arsenic the animals put on weight so long as the drug was continued. It was then decided to try the effect of substances rich in vitamins, such as cabbage leaf extract, cod-liver oil and egg yolk.

A filtered extract of cabbage leaves was injected subcutaneously in doses of 10 c.c. Rapid improvement was obtained, though in some cases abscesses occurred. The injection of cod-liver oil sterilised at 120°C. had no effect, as its vitamins were destroyed. An improvement, less rapid and less marked than with cabbage extract, followed the injection of cod-liver oil to which one drop of tincture of iodine had been added for every 25 gm. The injection of 10 c.c. of egg yolk, after sterilising the shell, also gave good results.

The author concludes that the injection of cabbage extract, egg yolk and cod-liver oil gave more rapid, lasting and marked results than the injections of cacodylates. He attributes this to the vitamins contained in these substances.

J. S.

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[The Importance of Assessing the Effects of Salivary Secretion in the Interpretation of the Results of Metabolism and Mineral Balance Experiments. Franklin, M. C. (1933-34.) 3rd Rept. Director Inst. Anim. Path. Univ. Camb. 135.]

During the course of metabolism experiments on lambs fed on rations of known composition, it was found that, during certain periods, the proportion of some of the constituents of the food residues differed very materially from the theoretical calculated values. It was shown that this was dependent upon the admixture of salivary secretions with the food residues. This factor may result in a relatively large increase in nitrogen, calcium, phosphorus, potassium and possibly other salts. The importance of recognising the influence of added saliva on nitrogen and mineral balance experiments is discussed.

R. E. G.

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[Rotenone. A New Parasiticide. Crane, D. B. (1933.) *Cornell Vet., 23,* 1, 15-31.]

Crane finds that "Rotenone" is effective against *Ancylostoma caninum, Toxascaris limbata* and *Belascaris marginata* in dogs, but of little use against tapeworms.

The dose recommended for general use in dogs against nematodes is 1/20 gm. per kilo of body weight, but it is not toxic in doses of 1/5 gm. per kilo. It is more effective when given after 18-24 hours' starvation. Observations were also made on parasitic diseases of non-helminthic origin.

P. A. C.

(Contributed by the Imperial Bureau of Agricultural Parasitology.)

Report

DEPARTMENTAL COMMITTEE ON LOCAL GOVERNMENT OFFICERS

The report of the above committee, appointed in September, 1930, is now to hand, bearing date January 10th, 1934, and is available at any of H.M. Stationery Offices, or may be purchased through any bookseller, price 1s. 6d. net.

The terms of reference of the committee were "to inquire into and make recommendations on the recruitment, qualifications, training and promotion of local government officers," report to be made to the Minister of Health.

In all, 47 meetings were held, 32 groups of witnesses attended to give evidence, and written evidence was received from 48 societies and individuals.

In brief, it was considered that the time had come for considerable revision of the present system of recruiting and training officers. No consistent action would appear to be taken by local authorities as a whole to secure the best persons for their service, and to make the best use of them. Little effort is made to adjust the system of recruitment to the educational system of the country in such a way as to draw on all classes of the community. A closer relation between the system of recruitment and the educational system, in the opinion of the committee, was needed. To meet this, it was considered that the appointment of an Establishment Committee in each local government, or its equivalent, would contribute materially to the improved organisation of the service. Finally, the committee came to the conclusion that local government service stands in need of some central body which could advise on all questions affecting the appointment and training of officers, and that local governments should combine to set up a permanent body for this purpose. The establishment of this Central Advisory Committee was the chief of the recommendations of the Departmental Committee, the absence of which was regarded as one of the most serious defects in the existing system.

In the evidence as given by various associations, that of the National Veterinary Medical Association is summarised in the report as follows:—

"National Veterinary Medical Association of Great Britain and Ireland.

"The Association suggested that veterinary officers should be invested with wider powers, and should be head of their department and directly responsible to the employing committee. It would, in their opinion, be desirable that holders of veterinary public health appointments should, in addition to being a Member or Fellow of the Royal College of Veterinary Surgeons, hold at least one of the following qualifications: diploma in veterinary state medicine, diploma in veterinary hygiene, degree of bachelor in veterinary science."

Quoting, however, from the transcript of the actual evidence submitted by the National Veterinary Medical Association, it will be interesting to readers to add *in extenso* the following remarks under heading "Consolidation of the Veterinary Work of Local Governments":—

"Though not strictly within the terms of reference of the Departmental Committee on Local Government Officers, it is fitting to append a few remarks which would add to the success of veterinary endeavour on the part of local authorities.

"(*a*) It is essential that there should be intimate co-operation and understanding between the Veterinary Officers and other officers and departments of public health organisations. Good team work by the Medical Officer of Health, the Veterinary Officer, the Chief Constable and the Sanitary Inspector, backed up by the appropriate committees, is a necessary factor in the reduction of incidence of disease both animal and human.

"(*b*) Adequate safeguarding of the health of the community being the *raison d'être* of public health services, it is considered that milk-borne diseases of children would be greatly minimised by compulsory veterinary inspection of dairy cattle.

"(*c*) In order that the Veterinary Officer may carry out the necessary diagnostic laboratory tests it would be desirable that laboratory facilities should be available for this purpose.

"(*d*) Definite steps must be taken to secure the freedom of dairy cattle from tuberculosis, the most serious incidence-reflecting disease.

"(*e*) A more complete and rational Veterinary Public Health organisation for an attack on diseases of a communicable nature is clearly indicated in this country and appropriate measures will ever have the entire support of National Veterinary Medical Association, and members of the Veterinary Profession."

J. M.

DORSETSHIRE APPOINTMENTS REFERRED BACK

The Southern Times reports that, at its last meeting, the Dorsetshire County Council referred back the recommended appointment of veterinary surgeon inspectors for further information from the Ministry of Health as to the allocation of the £750,000 on the clean milk campaign.

Review

[**The Practice of Veterinary Medicine.** By D. H. Udall, Professor of Veterinary Medicine in the New York State Veterinary College at Cornell University. Published by the author in September, 1933, with 81 illustrations. Price $5.00, post free.]

The work comprises a systematic treatise of the internal diseases of the herbivorous domesticated animals and swine, and is based upon the experience and recorded observations of the author and his associates, gained during the past 20 years in the vicinity of the New York State. Throughout the work reference is made to the clinical records of the Ambulatory Clinic of the New York Veterinary College, and the reader is impressed by the extent of the author's experience and the soundness of his conclusions.

The book will appeal especially to students and practising veterinary surgeons.

The subject of the digestive disturbances of horses and cattle is dealt with in a most comprehensive fashion. In the case of the horse, conclusions are based upon 715 observed cases, and it is of interest to note that torsion occurred in 6·7 per cent. Traumatic gastritis and its complications form one of the commonest causes of death in cattle. Dr. Udall encountered 148 cases in his clinic in four years. An observation of interest is that 50 per cent. of acute cases occur in advanced pregnancy. It is suggested that the increased abdominal pressure causes what had terminated in a chronic adhesive and circumscribed peritonitis between the reticulum and the diaphragm, to extend, and induce serious damage in adjacent organs. Dealing with operative interference for the relief of the condition, he quotes the results of his surgical colleague, 29 recoveries in 43 cases.

The chapters dealing with diseases of metabolic origin will be found most useful, especially those on acetonæmia, railroad fever and grass tetany. In the case of milk fever, the author, having reviewed the recent work on the condition, makes the suggestion that puerperal infection may be a predisposing factor. It is significant that in 25 per cent. of his cases there was co-existing puerperal disease.

The subject of tuberculosis is dealt with in a lavish manner. The views of our American colleagues on this question are of great interest to us, for in their country an active campaign of eradication is in progress. Attention might be drawn to the following paragraph: "In any community in which the incidence is as high as 15 per cent., the total loss is heavy. In the area covered by our Ambulatory Clinic the rate was formerly 15 per cent., and the clinic records show many calls to treat clinical cases of tuberculosis. At the present time we hardly encounter a single case in a year. The perpetual tax imposed by the disease is far greater than the cost of eradication."

The application of the tuberculin test in areas which are free of the disease gives material for the assessment of its fallacies, and it is mentioned that difficulties arise from slight reactions in free districts. It is suggested that some other of the mycobacteria may invade the tissues and sensitise to tuberculin.

It is surprising to find that no reference is made to the double intradermal test as introduced in this country by Buxton and his colleagues. The methods adopted are the anal and vulval folds.

Whilst these short references will serve to indicate the nature of the material of the book, they by no means exhaust its scope. The tables of reference serve to show that the author has scoured world literature, and it is safe to assume that very little authoritative work has been disregarded.

The book is a valuable addition to veterinary literature, and it is strongly recommended, not only to students, but to all practitioners.

N.V.M.A. Divisional Reports

DUMFRIES AND GALLOWAY V.M.A.*

ANNUAL GENERAL MEETING

The Annual General Meeting of the above Division was held at the Station Hotel, Dumfries, on December 21st, 1933, when the following members were present: Mr. John Allan, Castle Douglas (President); Messrs. W. T. Hewetson, O. Stinson, W. L. Mackenzie, J. Reid, A. J. Kennedy, G. W. Davidson, G. A. Sangster, A. Young and F. A. Davidson (Honorary Secretary). Messrs. J. C. Dyson, A. Gibb and J. Macaulay were present as visitors.

Apologies for absence were received from Dr. Greig, Dr. Dryerre, Messrs. R. Craig Robinson, W. G. Robinson, A. Edgar, P. McKinlay, J. Ritchie, R. Simpson and J. Cameron.

The minutes were read by the Secretary and adopted on the motion of Mr. Reid, seconded by Mr. Young.

Membership Nomination.—Mr. A. Steele, Catherine Street, Dumfries, was nominated as a member of the Division by the Secretary, seconded by Mr. Milligan.

Financial Statement.—The Honorary Treasurer submitted a statement on the financial position of the Division for 1932-33 and, on the

* Received for publication, February 16th.

motion of the President, seconded by Mr. Hewetson, it was agreed unanimously that the total sum accumulated in the special Fund for the year 1932-33 be paid to the Division's representative on the Councils of the R.C.V.S. and the N.V.M.A.

Election of Office Bearers

The following were elected as officers for the ensuing year:—

President.—On the motion of the President, seconded by Mr. W. T. Hewetson, Mr. O. Stinson, Appleby, was unanimously elected President.

Vice-President.—The retiring President, Mr. John Allan, was elected, on the motion of Mr. A. Young, seconded by Mr. A. J. Milligan.

Secretary and Treasurer.—Mr. F. A. Davidson, the Honorary Secretary, intimated his resignation of the joint post, as he was leaving the district in a short time. It was moved by Mr. A. J. Milligan, seconded by Mr. N. H. McAlister, and carried with acclamation, that Mr. G. A. Sangster, Dumfries, be elected Honorary Secretary and Treasurer.

Correspondence.—The Secretary read correspondence in relation to matters which had been discussed at the last meeting, and required no special action at this one. On the motion of Mr. N. H. McAlister, seconded by Mr. A. Young, he was instructed, however, to communicate with the Secretary of the Scottish Branch, and ask that a meeting of the "Practitioners' Committee" of the Branch be held as soon as possible.

Election of Life Member.—The President then intimated that he had a very pleasant motion to place before the meeting, and said that he knew that it would receive the unanimous support of the members. He was sorry that Mr. James Bell, Carlisle, was not able to be present with them that day, but they all knew the keen interest he had always taken in the affairs of the Division. No member was more welcome at their meetings, especially at the "Summer outings," when his genial presence made their success complete. As they all knew, some years ago Mr. Bell retired from general practice, but he had not allowed his membership of the Division to lapse, as others in a similar position were inclined to do. Therefore, it gave him very great pleasure to propose Mr. Bell as a life member of the Division, and, though he had said very little in support of his proposal, he knew that a long speech was entirely unnecessary. Mr. A. Young and Mr. W. T. Hewetson supported the President's motion, and it was unanimously and enthusiastically agreed to by the meeting.

Next Meeting.—It was agreed to hold the next meeting at Carlisle, on a Tuesday towards the end of February or beginning of March, the subject to be the choice of the President.

Papers.—After lunch at the hotel, short papers were read by members of the Division. The discussions, which were informal, lasted for two or three hours, and there was an interchange of much useful information on the various subjects and several items were left over to be brought up again at a later meeting. Following is the list of papers:—

1.—By Mr. N. H. McAlister, Kirkcudbright: "(*a*) Mammitis; (*b*) Contagious Abortion."

2.—By Captain R. Simpson, Carlisle (*in absentia*): "Two Cases of Sarcoma in the Cow."

3.—By Mr. A. J. Kennedy, Thornhill: "Lung Worm Disease of Cattle."

4.—By Mr. O. Stinson, Appleby: "Recent improvements in the treatment of Post-parturient Dyspepsia."

[The contributions by Messrs. Simpson and Kennedy are reproduced earlier in this issue; the remainder have not been received.—Ed., *V.R.*]

Exhibits.—Mr. R. Craig Robinson, Carlisle, unfortunately, was unable to be present, but forwarded a number of very interesting photographs, with notes, of cattle implicated recently in a Court case at Carlisle. The photographs were exceptionally good, and showed up the points mentioned in the notes very clearly, and there was a lengthy discussion on the merits of the case.

Mr. N. H. McAlister also demonstrated an interesting calculus.

Francis A. Davidson, *Hon. Secretary.*

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NORTH OF SCOTLAND V.M.A.*

PRESIDENT'S ADDRESS AT ABERDEEN

The half-yearly meeting of the Division was held in Marischal College, Aberdeen, on Saturday, January 27, 1934.

Mr. William Anderson, Keith, the President, was in the chair, and there were also present: Messrs. Alexander Niven, Alex. Sievwright, D. Clark, H. McVean, John Lyon, J. C. Grant, W. J. Rice and George Howie (Honorary Secretary).

Apologies for absence were received from Messrs. D. Crabb, W. Hepburn and R. E. Drennan.

The minutes of the last meeting were taken as read, as they appeared in *The Veterinary Record*, and were approved and signed.

Correspondence.—(1) From the General Secretary, National Veterinary Medical Association, dated January 24th, 1934, requesting the Division to forward the name of a delegate appointed to represent the Branch at the Annual Congress of the Royal Sanitary Institute.

After discussion on the advisability of appointing a delegate, it was agreed that if the Honorary Secretary were appointed by the Town

*Received for publication February 23rd.

Council, he might also act as representative of the Division.

(2) From the British National Committee dated January 24th, 1934, intimating that it was proposed to establish a fund to provide financial assistance for members of the National Veterinary Medical Association who were anxious to attend the International Veterinary Congress at New York, in August of this year, but who, in view of the heavy cost entailed, might not feel themselves in a position to do so. The members of the National Committee also stated in their letter that they would be very glad to receive donations from individuals or from this Branch of the Association.

The Secretary informed the members that the financial condition of the Branch was good enough to allow a donation to be made, and it was proposed by Mr. Rice, and seconded by Mr. Sievwright, that a donation of five guineas be forwarded to the Honorary Secretary.

(3) From Mr. G. Moir, regretting that owing to business reasons, he was unable to reconsider his resignation from the Division.

It was resolved to receive Mr. Moir's resignation with regret.

New Members.—Mr. George Howie proposed, and Mr. H. McVean seconded the nomination of Mr. George MacDonald, Huntly, for membership of the Division, and Mr. Duncan Cumming proposed and Mr. Alexander Niven seconded the nomination of Mr. Alexander Thomson, Aberdeen. Both members were duly admitted and welcomed as members of the Division.

Election of Office Bearers.

The office-bearers for the ensuing year were elected as follows:—

President.—Mr. David Crabb, New Aberdour, proposed by Mr. John Grant, and seconded by Mr. William Anderson.

Vice-Presidents.—Senior, Mr. John C. Grant, Aberdeen. *Junior,* Mr. Duncan Cumming, Culter.

Council.—Messrs. W. J. Rice, Montrose; J. Anderson, Keith; R. E. Drennan, Aberdeen; A. Niven, Inverurie, and W. J. B. Robson, Laurencekirk.

Secretary and Treasurer.—Mr. George Howie was re-elected.

Presidential Address

The President (Mr. William Anderson) then gave his Address in the following terms:—

First of all I have to thank you for electing me your President for the year. I feel honoured, and trust that I may, with your assistance, carry out the duties to your satisfaction.

It is customary for the President to give a short address, and as I am one of the original members of the Society, perhaps you will bear with me while I look back a number of years.

In 1894—40 years ago, and 20 years after I began practice— a preliminary meeting of veterinary surgeons was held in Aberdeen, at McDonald's Hotel, Market Street, for the purpose of considering what steps should be taken to form a Veterinary Medical Society in the North of Scotland. Mr. James Thomson, Aberdeen, the leader in the movement, was called to the chair, and Mr. Skinner, Oldmeldrum, was appointed clerk to the committee. A general meeting of the committee was convened on July 27th, 1894, the day of the Highland Show, at Aberdeen, when Mr. Thomson was appointed President, Messrs. Barron, Echt, and Duncan, Methlick, Vice-Presidents, and Mr. Skinner, Secretary. The Committee consisted of Messrs. Howie, Alford; McGregor, Kintore; Mackie, Aberlour; Mellis, Inverurie; Murray, Banchory; Wood, Turriff, and myself.

Professor William Williams, the grand old man of the veterinary profession, attended and delivered an inspiring address advocating the necessity of forming such societies. For years he was a pioneer in the profession, and saw the necessity for them. The first Presidential Address was delivered by Mr. Thomson, on January 26th, 1895, in Airth's Hall, Market Street, to a large audience, almost every member being present. The second meeting of that year was held in August, at Mollison's Restaurant, when Mr. Howie, Alford, read a paper recommending the use of alcoholic stimulants in the treatment of milk fever. There was a lively discussion, and great diversity of opinion. The membership at that time was 20.

As you all know, Mr. Howie was for many years the enthusiastic secretary of this society and, Gentlemen, I think I am right in saying that had it not been for his untiring work the Division would not be in its present thriving position. (Hear, hear.) In passing, I would like to say that it is a great pleasure for us to have his son with us as secretary now. His father, I am sure, would have been proud to know he succeeded him. (Applause.)

Up to this time, and for years afterwards, we met in halls and hotels. Later, through the good offices of the late Mr. McLauchlan Young, we were honoured by being allowed to hold our meetings in Marischal College. As far as I know, Mr. Crabb, New Aberdour; Mr. Skinner, Oldmeldrum, and myself are the only original members left. Mr. Skinner's resignation, many years ago, was a great loss to the Society.

I would like to say a little about the state of the profession 60 years ago when I graduated. At that time the preliminary examination was very simple indeed, and one had to attend classes for two years before going up for the final examination. The Highland Society and the Royal College both held examinations and granted diplomas. I took both. Professor Williams was Principal at the "Dick" College

during my first year, and when he broke away and started the new college in Gayfield Square, most of the students went with him, I among them.

The work of a practice, especially a scattered country one, was not so easily overtaken then as now. The bulk of it was done on horse-back; gigs at that time were not so common, and those in use were cumbersome. Nevertheless, the work was accomplished, and, when I look back, I am inclined to think that clients then had more patience than nowadays, in spite of the time it took to reach outlying places. Now that cars are in general use, one saves much time in travelling, which is to the advantage of the patient and its owner.

Horses and cattle were the only animals to get veterinary attention, and the former made up the bulk of the practitioner's work. Alimentary and digestive disturbances were the chief sources of trouble in those days in horses—all due to the system, then prevalent, of feeding large quantities of boiled food. It was the general custom to feed a bucketful of very inferior boiled food to farm horses about 7 p.m. They liked it, and bolted it greedily, with the result that colics were of nightly occurrence, accounting for a great deal of night work for the veterinary surgeon. It was customary to remain in attendance until the animal got over the attack or died. The death-rate was very heavy—greater, I think, than that from our present day scourge "grass sickness," but as the farmers themselves were responsible, through their persistence in using boiled foods, they thought nothing about it. The animals just died. It took about 30 years to get this system of feeding stopped, and now colics are comparatively rare. Laminitis and lymphangitis were also common ailments, again due to bad feeding. Strangles—a disease which we seldom see now—was a scourge in those days.

In cattle, pleuro-pneumonia was very prevalent, and was a source of considerable trouble and anxiety to the practitioner. One never knew when a case would turn up, and consequently had to be on the look out for it all the time. It was difficult to distinguish it from other lung affections, and no allowance was made for a mistaken diagnosis.

Foot-and-mouth disease was also very common. I had two visitations from it, in my district, with an interval of a few years between the outbreaks. They were very widespread, but mild in character. The mortality was low, except in young calves. It was noted that calves born from cows which had lived through an attack did not contract the disease. They seemed to be immune. There was strict isolation of cattle on affected farms, but no precautions were taken so far as attendants were concerned. Later on, the local authority issued waterproof overalls to veterinary surgeons, which had to be worn, as at present. I remember an outbreak on one farm where all the animals were affected—cattle, sheep, pigs and poultry.

Anthrax and quarter ill were very common. The diagnosis was usually made by *post-mortem* examination. There were no clinical thermometers, and microscopes were rare. The introduction of these instruments added greatly to the interest in practice. Tuberculosis was very rampant, but little was known of its highly infectious character, and few precautions were taken to control it.

To-day we find many changes. Horse practice is not what it was—mechanical traction having supplanted the horse to a great extent—and I am afraid, as time goes on, his numbers will become fewer. It is a pity to think that this should be so, but this is balanced, to a certain extent, by the increase in dairy stock—now a very important branch—and the greater attention paid to the rearing of sheep, pigs and poultry.

In city, and to a less extent in country practices, dogs and cats form an important branch of a veterinary surgeon's work, and every practitioner ought to keep himself abreast of the times, and be prepared to cope efficiently with this growing branch. Lady graduates are becoming numerous, and, I have no doubt, will find a big field for their energies in small animal practice—a department for which they are eminently suited.

Public health work is very important now. We have our specialists in the various departments of this work, and rightly so. The trend seems to be towards the appointment of a whole-time veterinary officer in the various counties or areas, with whole-time assistants as required. All these appointments naturally adversely affect the general practitioner who, for many years, carried out the duties of an inspector under the Contagious Diseases of Animals Act, Tuberculosis Order, etc., and, who, I think, did the work efficiently and economically. My experience of the appointment of whole-time inspectors has not convinced me that the work is being better done—rather do I think that the whole-time inspector is expected to do more than he can do. He is given more work than he can overtake and, naturally, inspections of our dairy herds are not carried out so frequently as they should be.

Would it not tend to more efficient control of disease if the services of the general practitioner were generally employed under the supervision of a Chief Veterinary Officer for a county or area? I am strongly of opinion that it would. The general practitioner is constantly in touch with the various herds in his district and, therefore, has a better knowledge of the

health of the herds than can be gained by a whole-time inspector, who makes an annual or bi-annual inspection.

I am sure you were all delighted when you learned of the appointment of Mr. William Nairn, Blairgowrie, to the Presidency of the National Veterinary Medical Association. (Hear, hear.) It is a great honour to him, and I am convinced, it is no more than his due. He has been an untiring worker for his profession, and has made a position in it which few can hope to attain. The meeting this year is in Edinburgh, and I hope all who can will make a point of attending it. By our attendance we can help to assure the success of the meeting, and at the same time show our appreciation of Mr. Nairn's appointment. We extend to him our good wishes for a successful term of office. (Applause.)

I cannot close without referring to our friend and member, Duncan Cumming, President of the Scottish Branch. Mr. Cumming has put in many years of useful work in the interests of his profession, and has always taken a keen interest in the affairs of the "National." That he has been made President of the Scottish Branch is, I am sure, only fitting reward for services ungrudgingly given, and we members of the North of Scotland Division rejoice in this recognition of his work. (Applause.)

May 1934 hold happiness and prosperity for you all.

Clinical Discussion

Following the President's Address, the remainder of the meeting was spent by members in discussing interesting cases.

Mr. Rice initiated a discussion on the treatment of milk fever, and asked if any of the members had had any experience of the use of 20 per cent. gluco-saline solution. He stated that although he had had excellent results from its use as a curative, he had also had abscess formation at the site of the injection.

Mr. Niven stated that he also had had abscess formation when he commenced using the modern treatment for milk fever, but he considered that this result was due to his faulty technique, as he now had no bad after-effects. He said that the secret of the treatment was the proper sterilisation and filtering of the solution used and also the injection of the liquid into the deeper-lying tissues at a proper temperature. He also preferred to use the powder form of calcium Sandoz to make up the solution.

The President said that he was very interested in the discussion on the treatment of milk fever, but, as far as he was concerned, the old-fashioned method of inflation of the udder could not be improved upon.

Mr. Rice also brought to the notice of the members his experience of the treatment of mastitis by the intramammary injections of a proprietary preparation called parenchymatol-silver-albumen, an acridin derivative with silver. He stated that his experience of the drug was recent and, therefore, limited, but what impressed him was the rapid results that followed on what appeared to be a very daring technique. He said that he had had successes with the old treatments of massage and infusions, but he had never had such rapid results as the new treatment had afforded and he felt that where one was reasonably certain that a coccal infection was involving the quarter, this new treatment would succeed. He then described the technique, which is as follows:—

The affected quarter is cleansed with soap and water and well dried. About 20 c.cs. of the solution are taken up in a syringe, a long hypodermic needle measuring about three inches is plunged well into the tissues of the quarter and the 20 c.cs. injected. The same injection is repeated in four other sites, each time using 20 c.cs., so that the full dose is 100 c.cs. If the quarter is very swollen, then 10 c.cs. should be injected at a time and a larger number of injections made. It is apparently essential that the needle must be plunged straight into the mammary tissue. Sometimes a mammary blood vessel is punctured and the udder bleeds freely, but the bleeding soon stops and causes no unfortunate after-effects. About five to ten minutes after the operation is completed, the affected quarter should be milked out, and it will be found that the milk is full of blood and tissue débris. This blood comes with a few more milkings, but within a week the milk yield is back to normal in quality and quantity. Mr. Rice said he had not yet had an opportunity to give the treatment an extended trial nor to establish in what particular types of mastitis the drug succeeds or fails, but he brought it to the notice of the members as a recent fashion in therapy which might be well worth their investigation.

He thought it would be of decided value if all who used the drug would record their experiences in the *Record*, as the merits and demerits of all new drugs and preparations would soon be decided by such a tribunal and many useless drugs would disappear from the market, giving place for a sound and reliable article.

Mr. McLaughlan stated that he also had used the same method of treatment for mastitis, but added that to obtain successful results the treatment must be applied at an early stage.

Mr. Sievwright, Tarland, said he was very glad to learn of a reliable treatment for mastitis, as the disease was the cause of great losses to the dairy farmer. On one of the farms in his practice, he had been troubled for many years with mastitis in maiden heifers. The treatment of this form of mastitis must of necessity be prophylactic, and he had tried many

preventatives. Last year he had inoculated 40 maiden heifers with a mixed mastitis vaccine and he had not had a single case of mastitis. Whether this favourable result was coincidence or due to the vaccine he did not know, but he considered the result justified the continuation of the measures he had begun last year.

Mr. Niven then gave a very interesting description of two cases which occurred in his practice. He said he brought them to the notice of the members because the issue in both cases was successful, although the treatment was unorthodox, and he wished to hear if any of the members had had a similar experience. [Mr. Niven's account of these cases is transferred to our Clinical Section.—Ed., *V.R.*]

Other members discussed the feeding of balanced mineral mixtures to pregnant ewes and cows.

Next Meeting.—The President then said that he wished to make a proposal regarding the time of the meeting. He knew that some of the members had discussed this before and he would like to have the members' opinions as to whether it would be more convenient to have their meetings in future in the afternoon instead of the forenoon. He personally had great difficulty in getting away in the morning and he was sure that other members who had to come from a considerable distance had the same difficulty, and he would like to propose that, in future, all meetings of the Division should be held at 2 p.m. After some discussion, it was unanimously agreed that such a proposal would be very satisfactory and more convenient for most members, and it was therefore decided that, in future, all meetings of the Division would be held in the afternoon, preceded by lunch together at some convenient meeting place.

The President remarked at the close of the meeting that he was very gratified that there had been such an animated discussion on a wide variety of subjects, and he wished to thank the members for bringing forward those interesting experiences and cases.

Mr. Rice proposed that a hearty vote of thanks be given to the President for so ably conducting the meeting. This was seconded by Mr. Duncan Cumming and carried with acclamation.

Geo. Howie, *Hon. Secretary.*

In Parliament

The following questions and answers have been recorded in the House of Commons recently:—

Tuberculosis

Captain Elliston asked the Minister of Health what percentage of all deaths from tuberculosis are caused by the bovine type of bacillus; how many children die annually from this cause; how many fresh cases of bovine infection develop each year; and what immediate steps can be taken to protect the public against the danger of tubercle infection through milk?

Mr. Shakespeare: The best available information on the subject is contained in an official Memorandum on Bovine Tuberculosis in Man, a copy of which I am sending to my hon. and gallant Friend. As regards the last part of the question, local authorities already have powers for stopping the supply of milk infected with tuberculosis and a committee of the Economic Advisory Council is now considering measures for reducing the incidence of bovine tuberculosis and improving the milk supply.

. . . . .

Dairy Herds (Tuberculosis)

Captain Elliston asked the Minister of Agriculture what percentage of milch cows in the dairy herds of this country are infected with tuberculosis; and how soon the present methods of veterinary supervision may be expected to ensure the eradication of this disease among cattle?

Mr. Elliot: There is no information available upon which to base a firm estimate giving the information required. The measures now in force are designed to remove animals in a stage of disease which renders them dangerous to public health and to other animals, and not primarily for the eradication of disease as such.

. . . . .

Dairy Herds (Disease)

Sir A. Sinclair asked the Prime Minister whether the Committee of the Economic Advisory Council, which was appointed in 1932 to consider what practical measures should be taken to secure a reduction in disease among milk cattle in this country, has yet reported; and when its recommendations will be published?

The Prime Minister: I understand that the Committee hope to be able to submit their report at an early date; as regards the second part of the question, reports of committees of the Economic Advisory Council are normally confidential, and I cannot say whether this report will be published until I have seen it.

. . . . .

Tuberculous Cattle (Slaughter)

Dr. Howitt asked the Minister of Agriculture how many tuberculous cattle have been slaughtered under the Diseases of Animals Act, 1925, and what has been the cost?

Mr. Elliot: During the eight years of the operation of the Tuberculosis Order of 1925 up to September 30th, 1933, 141,220 tuberculous cattle were slaughtered by local authorities in Great Britain, and the compensation paid amounted to £521,581.

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Education (Milk Supplies)

Sir John Haslam (*for* Captain Elliston) asked the Parliamentary Secretary to the Board of Education whether he will direct the attention of local education authorities to the memorandum on Bovine Tuberculosis in Man, issued by the Ministry of Health, with a recommendation that milk provided for school children should be certified Grade A (tuberculin tested) or efficiently pasteurised?

The Parliamentary Secretary to the Board of Education (Mr. Ramsbotham): Attention was called to the Ministry of Health memorandum on Bovine Tuberculosis in Man, which was issued in 1931, on page 54 of the report of the Chief Medical Officer of the Board of Education on the Health of the School Child, for 1930. It is the practice of the board, in approving proposals by local education authorities for the provision of milk to school children, to urge the authority to

make every effort to secure a supply of pasteurised or tuberculin tested milk.

Captain Heilgers: Is the hon. Gentleman aware that it is very difficult to obtain Grade A tuberculin tested milk any more, in view of the fact that the medical profession have a preference for dirty milk pasteurised, and that that preference has nearly killed the production of clean milk in this country?

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

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DIARY OF EVENTS

March 17th.—Annual General Meeting of the North of England Division, N.V.M.A., at Newcastle-on-Tyne.

March 19th.—Meeting of the Editorial Committee, N.V.M.A., at 2, Verulam Buildings, Gray's Inn, W.C.1, at 4.30 p.m.

March 22nd.—Annual Meeting of the Western Counties Division, N.V.M.A., at Exeter.

March 28th.—Annual General Meeting of the Southern Counties Division, N.V.M.A., at the Royal Veterinary College.

April 1st.—Annual Fees payable to R.C.V.S.

April 4th.—R.C.V.S. Committee Meetings.

April 5th.—R.C.V.S. Committee Meetings. 7 p.m.—**Annual Dinner** at Mayfair Hotel, Berkeley Square.

April 6th.—R.C.V.S. Committee and **Council** Meetings.

April. 9th.—N.V.M.A. Committee Meetings.

April 10th.—N.V.M.A. Committee and **Council** Meetings.

May 10th.—Last day for nominations, R.C.V.S. Council Election.

May 24th.—Voting papers issued, R.C.V.S. Council Election.

May 31st.—R.C.V.S. Council Election, voting papers to be returned.

June 7th.—**R.C.V.S. Annual General Meeting.**

July 30th-Aug. 3rd, 1934.—National Veterinary Medical Association Congress, Edinburgh.

Aug. 13th-18th, 1934.—Twelfth International Veterinary Congress, New York.

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R.C.V.S. COUNCIL ELECTION

A further nomination has now to be added, namely, Mr. Arnold Spicer, F.R.C.V.S., of New Oxted, whose proposers are Major T. Dalling and Colonel P. J. Simpson. This makes 14 nominations, including five sitting members, for eight vacancies.

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R.C.V.S. OBITUARY

Harrison, William Stanford, Hertford. Graduated London, April 20th, 1869; died February 5th, 1934.

PERSONAL

Further Presentations to Mr. F. A. Davidson

Following upon the tribute paid him by the Dumfries and Galloway Division, N.V.M.A. (as recorded in our issue of March 3rd) upon his pending departure to take up the post of Chief Veterinary Officer for Staffordshire, Mr. F. A. Davidson, B.Sc., M.R.C.V.S., has been the subject of further demonstrations of goodwill and esteem.

One of these occasions was of a private nature, a few friends and colleagues in the County Buildings, Dumfries, meeting in the Station Hotel, to offer Mr. Davidson their good wishes. At the same time, with a few well chosen words, Dr. Robertson, on behalf of the subscribers, handed to Mr. Davidson a tangible token of their esteem in the form of a gold and platinum watch chain.

The other event witnessed the foregathering of over 80 members of the agricultural community of the southern district of Dumfriesshire at Gracie's Banking Restaurant, Annan, when Mr. Davidson was made the recipient of handsome gifts.

Mr. D. Wyllie, Hannah, presided, and the gifts, which took the form of a writing desk, wallet and cheque, and electric torch, were handed over by Bailie Mackie, Broomhouses, Lockerbie. The writing desk was inscribed as follows: "Presented to Mr. F. A. Davidson, B.Sc., M.R.C.V.S., by his many friends in recognition of his valuable services to the agricultural community during his period of office as county veterinary officer in Dumfriesshire, 1926-34."

The Chairman, in his introductory remarks, said they were met that evening to honour their friend Mr. Davidson, who was leaving the district for a more important post in Staffordshire. They were all sorry he was leaving, but their best wishes went with him in his new appointment. Whether the English County Councils were in a stronger financial position than those in Scotland he was not in a position to say, but one thing he did know was that whenever they wanted a man of outstanding ability for a position of trust they were always ready and willing to pay a higher remuneration than County Councils in Scotland. Thus the County Councils of England drew from Scotland their very best men..

Mr. Mackie, in making the presentation, spoke of the cordial relationship which had always existed between Mr. Davidson and the farmers, whose admiration he had won because of the tact, diligence and common-sense he had exercised in the performance of his duties.

The success which had attended his efforts in administering the Dairy Regulations had placed Dumfriesshire ahead of any county in the kingdom, not only in byre equipment, but also in better and more hygienic methods of producing and handling milk. (Applause.) For his thoughtful instruction and advice, always so freely and willingly given, the dairy farmers of that county felt that they owed to him a deep debt of gratitude and, judging from the spontaneous and wholehearted manner in which the contributions came flowing in towards that testimonial, it was felt that his services had met with the approval of everyone. (Applause.)

Mr. Davidson, in the course of his acknowledgment, said he had tried to find out why he deserved that, as he had only carried out his duties, and the least that should be expected of any of them was that they did their respective jobs as capably as they could. He had done no more and did not deserve such unnecessary reward. The year 1926 was an important one

in the dairy trade of the county. The dairy bye-laws as drafted by the Department of Health for Scotland were adopted in the county and the majority of the burghs. Dumfriesshire, he thought, was the first county to do so, and no matter what faults they found with the bye-laws they had been useful, though he thought that Mr. Sangster and himself could claim credit for smoothing out the obvious impracticabilities contained in them. These errors, no doubt, were due to the fact that they were drafted probably in an office in Edinburgh without any great knowledge of practical dairying. However, it led to the first real survey of dairy premises within the county, and it had always been their object to apply them in a manner which gradually became more efficient, with the result that now practically every alteration was made at the request of landlords or occupiers, as they saw the benefit of the details which were now included, and there had been a steady increase in the amount of work done under that heading for several years. The results were that they could claim, speaking generally, that Dumfriesshire milk was at the top of the tree regarding quality in every respect. (Applause.) He considered the general position of the herds in Dumfriesshire in regard to disease as good as, if not better than, that obtaining in any other county in Great Britain.

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Will.—Cooper, Mr. Hugh (37), of Northwood, Middlesex, veterinary pathologist (net personalty £7,029) gross value £7,057.

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DISEASED MEAT: MINISTRY'S ALLEGED INACTION

Allegations that no action had been taken by the Ministry of Health respecting tuberculous meat when they were communicated with by the St. Pancras Borough Council, at the request of the magistrate, Mr. Samuel Pope, who condemned it, were made at Clerkenwell Police Court, on March 9th.

James Avery, a farmer, of Nunney Catch Farm, Frome, Somerset, pleaded "Guilty" to summonses for depositing for sale at premises in Charterhouse Street, Smithfield, eight forequarters and eight hindquarters of beef which were unsound and unfit for the food of man. He was fined £50, and ordered to pay 15 guineas costs on the first summons. The second summons was not dealt with.

Mr. William Ricketts, for the prosecution, said their inspector, Mr. Penman, seized the carcasses of four beasts, which were afterwards condemned by the magistrate. They were cow-beef, of which, for some reason best known to themselves, country dealers were in the habit of sending large quantities to London. The carcasses were "a foul exhibition of filthy diseased meat." On one forequarter there was a swelling as large as a coconut, full of tuberculous pus. Another carcass was dropsical and quite unfit for food, and the two other beasts had also been tuberculous.

"By your (the magistrate's) request we communicated with the Ministry of Health," stated Mr. Ricketts, "and it shows the interest the Ministry take in this matter that they have not come near us."

Mr. Grattan-Doyle, counsel for the defence, said Avery had conducted a slaughterhouse for 14 years and had not been prosecuted before for this type of offence. On this occasion, however, he was the victim of bad luck. His wife was removed to a nursing home for a serious operation and when the beasts were slaughtered and dispatched he did not see them, because he was called to the nursing home.

The Magistrate said that there were supposed to be two barriers to protect the public. One was the country barrier of inspection, but this had failed and he therefore wanted the case to be sent to the Ministry of Health.

Mr. Ricketts: "We communicated with the Ministry. We invited them to see everything and retained it for their inspection. We reported fully what you said."

The Magistrate: "All I can say is that sitting here I am more and more disturbed at the weakness of the defences which are supposed to be set up to protect the ignorant and innocent citizen with regard to the food he buys."

Continuing, the Magistrate said that he had had considerable experience of this matter for many years, and in his opinion, local inspection—not in one part of the country but in many—wanted a thorough overhaul to ensure that this kind of meat was not dispatched to London. He read two columns in his morning paper about the interests of the British farmer, but this kind of thing was likely to drive people to other forms of diet or to chilled meat.

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R.A.V.C. Point-to-Point Notice Errata.—In our notice published last week, page 276, column 2, line 2, after—Cup, *continue as follows*:—"and Replica, and 75 per cent. of sweepstake. Second to receive Challenge Cup, presented by Major-General Sir John Moore, K.C.M.G., C.B., Replica, and 25 per cent. of sweepstake."

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The Editor does not hold himself responsible for the opinions of his correspondents.

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JOHNE'S DISEASE: THE QUESTION OF RECOVERY

To the Editor of The Veterinary Record

Sir,—On the occasion of the discussion on sewage at the meeting of the Central Division, N.V.M.A., on January 11th, 1934, I was apparently feeling in a cantankerous mood over the question of the differential diagnosis of Johne's disease and a gastro-enteric condition alleged to be due to sewage contamination of drinking water. I am sorry that I should have offended Professor Wooldridge by my remarks, as no discussion on such a subject is worth upsetting a long friendship. That he was not fair to me in his criticisms of those remarks may be put down to the above cause.

In the law case under discussion I disagreed very definitely with the expert evidence for the defence on the question of recovery in cases of Johne's disease. Put broadly, the evidence of Professor Wooldridge, Dr. Sheather, and Dr. Minett was to the effect that of recent years the power of recovery of cattle from Johne's disease has been recognised. Reading Professor Wooldridge's evidence dispassionately, one seems forced to the conclusion that his opinion is that early cases of Johne's disease frequently recover spontaneously and more rarely clinical cases.

What I would like to know is, how and when such a definite conclusion was arrived at? It is a matter of very great importance to the agricultural industry at the present moment, and one

on which there must be some understanding in the profession if satisfactory evidence is to be given in future legal actions.

Yours faithfully,

Pennard House, Sevenoaks. L. P. Pugh.
March 8th, 1934.

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TORSION OF THE PREGNANT UTERUS IN THE COW

To the Editor of The Veterinary Record

Sir,—In reply to your correspondent's question in *The Veterinary Record* of February 10th, regarding the correction of the above condition by other means than rolling the cow, I am pleased to give particulars of the methods I have adopted successfully in over 30 cases. I may state that where the torsion is half over, and one cannot get a hand into the uterus, or when the cow has a long pelvis and pendulous abdomen, I have found it impossible to correct the torsion without rolling the cow.

Technique.—Having diagnosed torsion, place the cow in a standing position, hind quarters slightly raised. Except in the case of a tall person, it is best for the operator to be standing on the same level as the cow. Have a hand and arm well lubricated, insert the hand into the vagina; as it is pushed along it will gradually twist, following the folds of the vagina. The direction of the folds indicates whether the torsion is to the right or to the left. In my experience, it is very rarely one comes across a torsion to the left. Pass the hand through the *os uteri*, break down the placental membranes, ascertain whether the presentation is anterior, posterior, or abnormal.

In an anterior presentation the fore feet and the head of the fœtus will be felt; the body will, in most cases, be lying with the back to the same side as the torsion. Having ascertained the position of the fœtus, double back the fore legs at the knee, push the head well down between the fore legs; it is important that the head be in such a position that it will not come in hard contact with the rim of the pelvis, or the lumbar vertebræ, when turning. Slip the hand below the lowest fore leg, just in front of the elbow, grasp the metacarpal bone near the knee. Having got a good hold, apply power to turn the fœtus in the direction opposite to the torsion. As a result of the power exerted the torsion will be partly undone. The hand can now be slipped further through, and the metacarpus of the upper fore leg grasped; another powerful swing and the fœtus will be felt moving into the normal position, and the torsion corrected. The feet and head can now be replaced into the normal position for delivery.

In a posterior presentation, the fœtus has to be pushed well forward, the hind legs doubled at the hocks. The hand is slipped below the lowest leg, and the metatarsal grasped in front of the hock. The same procedure is followed as described for an anterior presentation. I trust this short description of the methods employed by me will be of some service to your correspondent.

Yours faithfully,

Transy, Peterculter. Duncan Cumming.
March 7th, 1934.

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REGENERATION OF TESTICLES IN CAPONS

To the Editor of The Veterinary Record

Sir,—R.I.R. cockerels, four months old, were castrated in June, and after a few days were turned in a yard with hens, no other male bird being kept on the premises. In November it was observed that one or more capons trod the hens and if these capons or cockerels, as they appeared to have again become, were killed off others would take their place in charge of the hens. Examination showed testicles in the normal position—sometimes a normal one and a misshapen one, but usually a normal pair. Testicular tissue was normal and eggs from the hens proved fertile.

I recall a communication in *The Veterinary Record*, possibly three years ago, by, I think, Colonel Martin, who, in writing regarding gland grafting, stated that in castrating a cockerel a testicle had slipped back into the abdomen and as the bird afterwards behaved as a cockerel he presumed the gland had become grafted. I think it is more probable that new testicles had grown in the natural position.

Yours faithfully,

Rock Hill, Brackley, Northamptonshire. Geo. H. Jelbart.
March 10th, 1934.

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THE CLYDESDALE

To the Editor of The Veterinary Record

Sir,—I was rather surprised to read Mr. R. C. Irving's comment on the Clydesdale in the Central Veterinary Society's discussion, reported in your issue of March 10th.

History records that the Scottish pioneers in this breed always chose examples primarily with good legs and feet, whereas the Shire men put the chief stress on the body of their horses. Hence it has always been assumed that, whatever else the Clydesdale lacked, its legs and feet were mainly above suspicion.

Yours truly,

Bolton. G. Mayall, M.R.C.V.S.

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VICTORIA VETERINARY BENEVOLENT FUND.

To the Editor of The Veterinary Record

Sir,—We are in great need of further subscriptions to the Fund. At the present moment we have an adverse balance at the Bank, and we have several urgent appeals for assistance. One is from an old member, 83 years of age, who cannot work any longer and has no means. Another is from the wife of a member who has been taken to an asylum—she has one son aged 14 and has no income whatever. She owes four weeks rent and the bailiffs are about to be put in. What can we do but help? This letter will be read by many who do not subscribe to the Fund. May I express the earnest hope that it will induce them to send me a subscription of half-a-guinea and so put us in a position to afford the assistance so urgently needed.

Yours faithfully,

10, Red Lion Square, London, W.C.1. Fred Bullock, *Secretary.*
March 13th, 1934.

The Editor acknowledges, with thanks, the receipt of the following:—

Communications from Mr. D. J. Anthony (Brierley Hill), Mr. J. M. Armfield (Chipstead), Mr. V. Berwyn Jones (Guildford) and Colonel G. K. Walker (Abingdon).

Report of a meeting of the Lancashire Division, N.V.M.A., from Mr. A. L. Mullen (Hon. Secretary).